

Perceptions of intergroup bias: The roles of social projection and meta-stereotypes

by

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Abstract

Underlying intergroup perceptions include processes of *social projection* (perceiving personal traits/beliefs in others, see Krueger 1998) and *meta-stereotyping* (thinking about other groups' perceptions of one's own group, see Vorauer et al., 1998). Two studies were conducted to investigate social projection and meta-stereotypes in the domain of White-Black racial relations. Study 1, a correlational study, examined the social projection of prejudice and 'prejudiced' meta-stereotypes among Whites. Results revealed that (a) Whites socially projected their intergroup attitudes onto other Whites (and Blacks) [i.e., Whites higher in prejudice against Blacks believed a large percentage of Whites (Blacks) are prejudiced against Blacks (Whites), whereas Whites low in prejudice believed a smaller percentage of Whites (Blacks) are prejudiced]; (b) Whites held the meta-stereotype that their group (Whites) is viewed by Blacks to be prejudiced; and (c) prejudiced meta-stereotypes may be formed through the social projection of intergroup attitudes (result of path-model tests). Further, several correlates of social projection and meta-stereotypes were identified, including the finding that feeling negatively stereotyped by an outgroup predicted outgroup avoidance through heightened intergroup anxiety.

Study 2 replicated and extended these findings, investigating the social projection of ingroup favouritism and meta- and other-stereotypes about ingroup favouritism. These processes were examined experimentally using an anticipated intergroup contact paradigm. The goal was to understand the experimental conditions under which people would display the strongest social projection of intergroup attitudes, and when experimentally induced meta-stereotypes (vs. other-stereotypes; beliefs about the group

preferences of one's outgroup) would be most damaging to intergroup contact. White participants were randomly assigned to one of six conditions and received (alleged) feedback from a previously completed computer-based test. Depending on condition, this information suggested that: (a) the participant favoured Whites over Blacks; (b) previous White participants favoured Whites over Blacks; (c) the participant's Black partner favoured Blacks over Whites; (d) previous Black participants favoured Blacks over Whites; (e) the participant's Black partner viewed the participant to favour Whites over Blacks; or (f) Black participants previously participating viewed Whites to favour Whites over Blacks. In a defensive reaction, Whites exhibited enhanced social projection of personal intergroup attitudes onto their ingroup under experimental manipulations characterized by *self-concept threat* (i.e., when the computer revealed that the participant favoured the ingroup or was viewed to favour the ingroup). Manipulated meta- and other-stereotype information that introduced *intergroup contact threat*, on the other hand, each exerted a strong negative impact on intergroup contact expectations (e.g., anxiety). Personal meta-stereotype manipulations (i.e., when the participant was informed that her/his partner thinks s/he favours the ingroup) exerted an especially negative impact on intergroup behaviour, evidenced by increased avoidance of the upcoming interracial interaction. In contrast, personal self-stereotype manipulations (i.e., computer revealed that one favoured the ingroup) ironically improved upcoming intergroup contact expectations and intentions, likely due to an attempt to reduce the discomfort of holding negative intergroup attitudes. Implications and directions for future research are considered.

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Perceptions of intergroup bias: The roles of social projection and meta-stereotypes

A central theme of social psychology concerns how individuals are affected by those around them. Perceived thoughts, feelings, and behaviours of other people can affect the way one thinks, feels, and behaves. These characteristics of others are sometimes obvious, but they are often inferred or estimated. One domain in which this is particularly relevant is intergroup relations. One's perceptions regarding the beliefs of both the ingroup and outgroup can have an impact on intergroup relations. Underlying intergroup perceptions include processes of *social projection* (perceiving personal traits/beliefs in others, see Krueger 1998, for review) and *meta-stereotyping* (thinking about other groups' perceptions of one's own group, see Vorauer, Main, & O'Connell, 1998). These processes are quite influential in the context of intergroup relations. It is possible that the projection of intergroup attitudes and the meta-stereotype that one's group is viewed to hold negative intergroup attitudes lead to beliefs damaging to positive intergroup relations, and that meta-stereotypes especially can lead to negative intergroup contact. Damaging intergroup beliefs and negative intergroup contact can both perpetuate prejudice. The current research investigated the social projection of intergroup attitudes and the meta-stereotype that one (or one's group) holds negative intergroup attitudes (i.e., is prejudiced) in the context of White-Black racial relations.

Social Projection

Social projection refers to the tendency for people to perceive that others share their thoughts, feelings, and behaviours (see Krueger 1998, 2000, for reviews). The term was initially coined by Allport (1924), but current research on the topic began with Ross, Greene and House's (1977) studies on false consensus: one's belief that his/her response

is relatively common whereas alternatives are not. To illustrate, a person who agrees to wear a sandwich board displaying the word ‘repent’ is more likely to assume a large percentage of others would similarly agree to the task, whereas a person who does not agree to wear the board is more likely to assume a large percentage of others would refuse as well (Ross et al., 1977). Social projection may be a heuristic used by people to make predictions about others based on the self, thus providing a convenient “window into the social world” (Robbins & Krueger, 2005, p.32). People have been shown to socially project attitudes in various domains including politics (Granberg & Brent, 1983; Regan & Kilduff, 1988), economics (Kahneman & Snell, 1992), and communications (Keysar, Barr, Balin, & Brauner, 2000; Nickerson, 1999). Several meta-analyses have found social projection effects to be significant and replicable, with medium to large effect sizes (Mullen et al., 1985; Mullen & Hu, 1988; Robbins & Krueger, 2005).

Although Allport initially introduced the concept of *social* projection, ‘projection’ was originally a psychodynamic term. Freud (1911/1958) conceptualized projection as a defensive reaction to reduce threats to one’s self. In psychodynamic terms, projection refers to an unconscious process whereby undesirable thoughts, feelings, and attitudes are denied in the self and attributed to others as a mechanism to reduce the anxiety attached to such thoughts, feelings, and attitudes. One difference between this conceptualization and more contemporary notions of ‘social projection’ is that for the latter, the attributes projected may be desirable (e.g., happiness, see Feshbach, 1963), neutral (e.g., a preference for white bread vs. brown bread, see Ross et al., 1977), or undesirable (e.g., prejudiced attitudes, as the current research investigates). Another difference is that this process is not necessarily unconscious, though aspects of it may be. Also, the

characteristics projected are not necessarily denied as the psychodynamic approach alleges (e.g., it is not likely that one would deny a preference for brown bread).

Nonetheless, Freud's early theorizing has clearly influenced contemporary thinking about perceived traits in others. The current research examined the social projection of two types of intergroup attitudes, anti-outgroup bias (Study 1) and pro-ingroup bias (or "ingroup favouritism"; Study 2).

Issues of Concern

There are several issues of concern present in the social projection literature. A brief coverage of several of these issues follows. Because the social projection literature is so vast, the major focus is on points relevant to the current research.

Conceptualization of projection. Researchers vary in their conceptualization of projection, and hence, their means of measuring the construct. The classic operationalization of projection (known as the standard social projection paradigm, see Marks & Miller, 1987) involves a dichotomous measure of the attitude¹ of interest, where participants categorically indicate whether they do or do not endorse the attitude (yes versus no), followed by an estimate of the percentage of target group members possessing the attitude position. To measure projection, it is examined whether those indicating "yes" (versus "no") report that a higher percentage of the population endorses the personal attitude. This method has been well established as the standard by which to measure projection (see Mullen et al., 1985). One problem with this paradigm is the use of a dichotomous measure. This forced-choice procedure results in a loss of variance in participants' attitudes. Ames (2004b, Study 3) introduced a continuous measure of

¹ The standard social projection paradigm may be used to examine the projection of beliefs or other attributes as well, but attitudes are the focus of the present investigation.

participants' attitudes to capture this otherwise lost variance, which conveniently allows for difference-score measures of projection. The current research employed the standard social projection paradigm to provide evidence of projection, but also added a continuous attitude acknowledgement measure, in keeping with Ames (2004b). This allows for the examination of correlations and difference scores, and more fully captures the projection phenomenon.

Ingroup versus outgroup projection. One major theme in the projection literature is the issue of ingroup versus outgroup projection. It is reasonable to assume that projection to others is strongest when the target is perceived as similar to the person doing the projecting. Thus, most research on social projection has addressed ingroup projection; only more recently has outgroup projection been examined (e.g., Riketta, 2006; Riketta & Sacramento, 2008; Robbins & Krueger, 2005; Stathi & Crisp, 2008). Researchers have identified several possible models of outgroup social projection. The first is that people project to outgroups as they typically do to ingroups (i.e., they assume that outgroup members share their own thoughts, feelings, and behaviours), which has been labeled both "assimilation" projection (Spears & Manstead, 1990) and the "induction hypothesis" (Robbins & Krueger, 2005). The second approach to outgroup projection is that people perceive low consensus for their thoughts, feelings, and behaviours in the outgroup, which has been labeled both "contrast" projection (Spears & Manstead, 1990), and the "differentiation hypothesis" (Robbins & Krueger, 2005). The final approach, labeled the "null hypothesis" (Robbins & Krueger, 2005), states that projection to outgroups does not occur. Evidence has been cited supporting the assimilation/induction (Robbins & Krueger, 2005; Riketta, 2006; Riketta & Sacramento,

2008; Spears & Manstead, 1990), contrast/differentiation (Mullen, Dovidio, Johnson and Copper, 1992), and null (Clement & Krueger, 2002) outgroup projection hypotheses.

These inconsistent outcomes reflect a need for further research. Generally though, most research supports the possibility of assimilative (but weaker than to ingroup) projection to outgroups (Robbins & Krueger, 2005). However, the issue is not fully resolved. The current study examined both ingroup and outgroup projection of intergroup attitudes.

Accuracy of projection. In their classic studies of social projection, Ross et al. (1977) regarded projection as erroneous. In fact, they termed the process “*false consensus*.” Projection was initially considered, and still is by many (e.g., see de la Haye, 2000; Strube & Rahimi, 2006), a flawed and irrational way of thinking, in that “not everybody can be right” (Krueger, 1996, p. 537). More recent theorizing conceptualizes projection less as an irrational process and more as a reasonable form of inductive reasoning (Dawes, 1989, 1990; Hoch, 1987; Krueger & Zeiger, 1993). From this perspective, information about one’s self is considered the best source to use when estimating information about others. This may be because an individual’s attitudes are less likely to be uncommon than they are to be common. That is, if most people hold a given attitude, the probability is greater than chance that a randomly selected person will hold that attitude (see Krueger, 1996, for a detailed explanation). In terms of probability, if a large percentage of one’s ingroup holds (or does not hold) a certain attitude, it is likely that an individual group member holds (or does not hold) that attitude as well (Dawes, 1989). When this individual estimates that a large percentage of the population (usually the ingroup) endorses this attitude, his/her consensus estimate is therefore more

likely to be true than false. This explanation is specific to ingroup projection for the most part.

Some researchers address the issue of the accuracy of consensus estimates by interpreting false consensus as a *type* of social projection (e.g., Bauman & Geher, 2002). Others disregard the issue and use the terms “social projection” and “false consensus” interchangeably (e.g., Judd, Park, Yzerbet, Gordijn, & Muller, 2005). Still others resolve this issue by acknowledging a “truly” false consensus effect (Krueger, 1998; Krueger & Clement, 1994; Krueger & Zeiger, 1993) measured in such a way that it is clear that the consensus estimates are indeed false. Whereas the term “social projection” does not assume accuracy or inaccuracy in consensus estimates, the “truly false consensus effect” involves inaccuracy. The current research uses the term “social projection” rather than “false consensus” to refer to perceived congruence between self and others, broadly defined. I do not assume that consensus estimates are accurate or inaccurate; both possibilities are acknowledged. The focus of the present research did not concern projection accuracy, but simply understanding the projection of intergroup attitudes and when it occurs most strongly.

Motivated versus un-motivated projection. There is some disagreement regarding the reasons people project. Some researchers explain social projection as a *simple passive form of induction* whereby an individual uses the self as a sample to infer information about others (e.g., Dawes, 1989, 1990; Hoch, 1987, Krueger & Zeiger, 1993). Krueger (1998), a preeminent projection researcher, largely conceptualizes projection as a non-motivated process. Other researchers hold that projection, especially ingroup projection, is a motivated process. It has been suggested that people may project in order to feel that

they are normal (e.g., Sherman, Chassin, Presson, & Agostinelli, 1984; Sherman, Presson, & Chassin, 1984), or that they “belong” (e.g., Pyszczynski et al., 1996).

Essentially, the idea here is that one rates others to be similar to the self in order to *‘fit in’ with one’s group*.

Another motivational explanation for projection is that people project personal attributes onto others *when they feel threatened*, projecting in order to validate their potential flaws or shortcomings (e.g., Campbell, 1986). Newman and colleagues (see Newman & Caldwell, 2005; Newman, Duff, & Baumeister, 1997) introduce ‘defensive projection’, the projection of traits one wishes to deny in the self. Their model states that when one tries to deny or suppress certain traits, this leads to an ironic focus on these traits which are then readily ascribed to others. This is consistent with the previously mentioned psychodynamic view of projection, by which people project undesirable characteristics onto others to avoid the anxieties associated with possession of the characteristics. However, by examining the projection of traits “one *wishes* to deny”, Newman and colleagues minimize criticisms leveled at traditional psychodynamic projection (e.g., Freud, 1911/1958) regarding the questions of whether the ‘projector’ must possess and be aware of the projected trait (see Holmes, 1968, 1978). These criteria do not have to be met for Newman et al.’s (1997) defensive projection. Despite this discrepancy, Newman et al. (1997) assert that their conceptualization would be recognized by psychodynamic theorists as consistent with their theory of projection.

A related form of projection is ‘attributive projection’ (see Bramel, 1962, 1963; Holmes, 1968, 1978). With this form of projection, though, threatening traits are not denied. People are aware of the trait(s), and hence readily attribute it to others (especially

liked others, such as ingroup members) to reduce cognitive dissonance (e.g., Aronson, 1968; Festinger, 1957). Sharing such characteristics with positively evaluated others may reduce the anxiety of being the sole possessor of an undesirable trait. The issue of projection motivation remains unresolved, and was addressed by the current research in Study 2.

Direction of projection. Projection, as most commonly conceived, is a process of assuming that others are similar to one's self. However, because most data on projection are correlational, an opposing explanation is possible: people may assume that the self is similar to the group, especially the ingroup (i.e., people respond how they expect the group to respond). This possibility is termed "introjection" (Krueger, 2002). Proponents of social identity theory and self-categorization theory emphasize the importance of group memberships to one's identity (Tajfel & Turner, 1979; Turner, Oakes, Haslam & McGarty, 1994), and would presumably interpret projection in terms of introjection. Indeed, Krueger (2002) notes that introjection is an important part of the well-supported self-categorization theory. The self-stereotyping hypothesis, one of self-categorization theory's key principles, states that people assign to themselves and others the typical characteristics of their ingroup when social influence is salient, so that they become psychologically interchangeable with other ingroup members (Brown & Turner, 1981). Indeed, one paper from this group of researchers is even entitled "Knowing what to think by knowing who you are: Self-categorization and the nature of norm formation, conformity and group polarization" (Abrams, Wetherell, Cochrane, Hogg, & Turner, 1990).

Though the introjection hypothesis has its advocates, research has suggested that projection from self to group may be the more viable explanation of similarity ratings between self and group. For instance, response latency studies find that self-referent information is retrieved before consensus estimates (supporting the activation sequence required for the projection, see Cadinu & De Amicis, 1999). In addition, others have found correlations between fictitious information describing participants and participants' consensus estimates of these characteristics (Krueger, 2002), and that projection occurs in minimal group paradigms, where participants are assigned to arbitrary laboratory groups (Allen & Wilder 1979; Krueger & Clement, 1996). Krueger (2002) concludes that attempts to illustrate pure introjection, without evidence of projection contaminating the effects, have been weak or unreplicated (see Krueger, Acevedo & Robbins, 2006, for review).

Advocates of self-categorization theory challenge arguments supporting the projection hypothesis and provide evidence contradicting this position, though results are inconsistent. For example, some researchers have found that giving participants information regarding actual group consensus will change their original self-relevant responses to be more in line with the ingroup (Haslam et al., 1996; Stangor, Sechrist, & Jost, 2001), supporting the introjection hypothesis. Others have found such effects only for those with ambivalent attitudes (Hodson, Maio, & Esses, 2001). Moreover, others have found that such information does not change participants' original responses (Alicke & Largo, 1995; Krueger & Clement, 1994), refuting the introjection hypothesis. These differences may be due to the very different contexts of these studies: sandwich-board-wearing (Krueger & Clement, 1994), performance on a 'social sensitivity' test (Alicke &

Largo, 1995), or intergroup stereotyping (Haslam et al., 1996; Stangor, Sechrist, & Jost, 2001), highlighting a need for further research. Perhaps introjection is a genuine phenomenon in the context of consensus estimates regarding intergroup attitudes and beliefs, which are group-relevant by definition. This issue was addressed by the current research.

Projection in the Context of Intergroup Relations

A major portion of the current research examined the extent to which people socially project their intergroup attitudes. Specifically, Study 1 examined the projection of anti-outgroup prejudice, and Study 2 explored the projection of ingroup favouritism. As mentioned above, it is well established that people project mundane attitudes (e.g., bread preferences, see Ross et al., 1977). There is also evidence that people project specific intergroup beliefs, or their beliefs regarding the *characteristics of certain groups*, such as ‘ignorant’ or ‘aggressive’ (see Krueger, 1996, and discussion below). One interesting area where there is limited research though, is the social projection of *intergroup attitudes* (e.g., prejudice). The current research builds on the previous investigations of mundane attitudes and specific intergroup beliefs by examining the projection of general intergroup attitudes (prejudice and ingroup favouritism). A brief review of the available literature on projection in the context of intergroup relations follows.

Krueger (1996) conducted a study in which Black and White participants rated Blacks and Whites generally on several attributes including aggressive, athletic, lazy, and practical. Participants rated both groups on the attributes according to their own beliefs, cultural stereotypes, and from the perspective of the racial group to which they did not

belong. It was found that people thought their personal beliefs regarding Whites or Blacks were common in their culture. This congruence between ratings of self and culture at large within each racial group demonstrated social projection. Importantly, Krueger established that people tend to socially project intergroup beliefs. Similarly, Strube and Rahimi (2006) conducted a study in which White university students rated the percentage of Blacks who possessed 16 traits according to their own and fellow students' beliefs. A positive average partial correlation between participants' own responses and judgments of other participants' responses, controlling for other participants' actual responses, indicated social projection of intergroup beliefs (e.g., poor, violent) as well.

Judd et al. (2005) conducted several studies on this topic, involving a number of target groups. Although Judd et al. (2005) claim to provide evidence of the projection of intergroup bias, upon further examination, it appears the authors found evidence of the projection of intergroup beliefs.² Across the studies, participants provided their own perceptions, their respective outgroup's perceptions, and their ingroup's (Studies 2 & 3 only) perceptions of several types of group evaluations.³ Correlations obtained between own beliefs and perceived others' beliefs provided evidence that the beliefs investigated in each respective study were socially projected to ingroups (Studies 2 & 3) and outgroups (all studies, discussion to follow).

² Judd et al. (2005) examined the projection of 'feature based group attribute evaluations' (i.e., 'To what extent does group X have high SAT math scores'), 'group stereotypicality evaluations', which measured the extent to which more stereotypical than counter-stereotypical traits or attributes are ascribed to a group, 'group similarity evaluations' (i.e., 'To what extent are all members of group X similar'), and global evaluations of groups (i.e., 'to what extent do you like versus dislike most members of group X'). For simplicity, when describing Judd et al's (2005) work, I will simply refer to the projection of these evaluations as the projection of 'intergroup beliefs'.

³ The types of group evaluations included: feature-based group attribute evaluations (all studies), group stereotypicality evaluations (all studies), group similarity evaluations (Studies 2 & 3) and global evaluations of groups (Study 3), see Footnote 2 for examples of these types of evaluations.

Evidence of outgroup projection of intergroup beliefs has also been obtained. In addition to finding that both Whites and Blacks projected their beliefs regarding the racial characteristics of the outgroup onto their culture at large, Krueger (1996) found that Whites' personal beliefs were correlated with cultural stereotypes perceived to be held by the outgroup (i.e., how Whites predicted Blacks would rate cultural stereotypes). For Black participants though, correlations between personal beliefs and cultural stereotype ratings attributed to Whites were close to zero. In other words, there was evidence of outgroup projection by Whites but not by Blacks. Judd et al. (2005) also found evidence of outgroup projection in their studies. They found projection of intergroup beliefs (see Footnote 2) on the behalf of Whites to several different outgroups (Asians, Hispanics, and Blacks) and *vice versa*, and projection of intergroup beliefs to both ingroups and outgroups in sex- and Nationality- defined groups. These studies provided evidence of outgroup projection in an intergroup domain.

Judd et al. (2005) made an important distinction with respect to outgroup projection in an intergroup domain. They distinguished between outgroup projection at the level of specific category versus the level of intergroup target category. Judd et al. (2005) found the projection of specific evaluations (feature-based group attribute evaluations, group stereotypicality evaluations, and group similarity evaluations, see Footnote 2 for examples) occurred at the level of specific category, whereas the projection of global evaluations of groups (similar to the projection of group favouritism investigated by the current research) occurred at the level of intergroup target category (See Appendix A for a glossary of these and other terms). In Judd et al.'s (2005) work, projection at the specific category level involved a correlation between own and other's

evaluative ratings, such that the more I (for example) like Whites (my ingroup) [i.e., ingroup favouritism] the more I believe my outgroup (Blacks) likes Whites [i.e., outgroup favouritism]. In other words, the more positively I rate my ingroup, the more positively I believe my outgroup rates my ingroup (their outgroup) as well; thus, I am projecting my evaluation of my *specific category*, 'Whites', onto the outgroup. In contrast, projection at the level of intergroup target category involves a correlation between own and other's evaluative ratings, such that the more I like my ingroup (Whites), the more I believe my outgroup (Blacks) likes *their ingroup* (Blacks). Here, the more positively I rate my ingroup, the more positively I believe my outgroup rates their own ingroup, showing evidence of projecting an evaluation of an *intergroup target* category. This distinction is important with regard to outgroup projection in an intergroup context.

These studies indicate that, in addition to ordinary beliefs and attitudes (e.g., liking of ice-cream), perceptions of intergroup characteristics can also be socially projected. These studies involved the projection of intergroup beliefs (e.g., intelligence), but the current research focuses on more *general intergroup attitudes* or orientations (e.g., anti-outgroup prejudice, ingroup favouritism). The projection of intergroup attitudes not only differs from previous research regarding the projection of intergroup beliefs, but it also differs considerably from most projection literature, which often deals with mundane attitudes (e.g., toward brown bread, sign wearing). The current research examines the projection of intergroup attitudes to ingroups and outgroups. Specifically, do Whites socially project perceptions of anti-outgroup prejudice (Study 1) or ingroup preferences (Study 2) onto Whites (and/or Blacks)?

This possibility was examined in an unpublished study by Hodson, Dovidio, and Gaertner (2000). The authors found that White participants' ratings of the intergroup attitudes held by Whites directly corresponded with participants' own responses. In other words, Whites high in racial bias estimated a large percentage of Whites were biased as well, whereas those low in racial bias estimated a low percentage of Whites held racial biases. A similar pattern was found regarding Whites' projection of intergroup attitudes onto Blacks, demonstrating evidence of outgroup projection. Thus, people projected their intergroup attitudes in the same way that people project more mundane attitudes (e.g., bread preferences) and intergroup beliefs (e.g., 'Blacks are aggressive'). The current research attempted to replicate this finding and more deeply explore its implications.

Negative Impact of Projecting Intergroup Attitudes

Although top projection researchers view projection as a useful social tool for making inferences about others, projection has the potential to be problematic, especially the projection of intergroup attitudes (e.g., being prejudiced). The projection of negative intergroup attitudes may be used as a way to justify prejudicial beliefs or attitudes, maintaining and exacerbating prejudice. Prejudiced people will have little incentive to reduce their personal biases if they think most people are biased. Projection may serve as a means to justify possession of the socially unacceptable intergroup attitude 'prejudiced'. In recent years, self-reports of racial prejudice have declined (Dovidio & Gaertner, 1998; Schuman, Steeh, Bobo, & Krysan, 1997) seemingly showing a turn toward more egalitarian values. Despite widespread social norms of egalitarianism in Western society, prejudice nevertheless exists. Contemporary forms of prejudice include modern racism (McConahay, 1986), aversive racism (Dovidio & Gaertner, 1998;

Gaertner & Dovidio, 1986; Hodson, Dovidio, & Gaertner, 2004), and symbolic racism (Sears, 1988). These forms of prejudice, more subtle than traditional prejudice, nonetheless remain problematic. It has been established that people are motivated to control or conceal prejudice (e.g., Dunton & Fazio, 1997; Legault, Green-Demers, Grant, & Chung 2007; Plant & Devine, 1998), which is evident by the subtle forms of prejudice referenced above. This illustrates an awareness that overt prejudice is not readily endorsed by society, which begs the question: how do people living in an apparently egalitarian society justify their highly prejudicial attitudes and manage to look favourably upon the self, as people prefer to do (see Greenwald, 1980; Taylor & Brown, 1988)? It is possible that social projection of intergroup attitudes is associated with prejudice justification. If one projects one's racial attitude, one may feel more comfortable in holding it. That is, if it is believed that others hold an attitude similar to the self, the attitude may be normalized.

As mentioned above, Hodson et al. (2000) found that Whites' ratings of the racial beliefs of Whites in the population corresponded with participants' own racial beliefs. This study also reported a particularly unsettling finding. Those who perceived high consensus for their negative racial attitudes also indicated that they justified their racial attitudes based on the attitudes of other Whites. Those who held negative racial attitudes therefore may have used the perceived beliefs of their ingroup members to validate such biases. It is similarly possible that people may use the perceived beliefs of the outgroup (i.e., outgroup projection) to validate their own beliefs. Therefore, when people believe that others agree with their own racial attitudes (i.e., when people project their intergroup

attitudes), these shared attitudes are perceived to be normative and acceptable, which can rationalize and maintain prejudice.

Experimental manipulations of racial attitude consensus have led people to maintain and act upon negative prejudicial attitudes. For instance, Sechrist and Stangor (2001) required White participants to complete a measure of prejudice toward Blacks. Following this, participants were given information that either a large or small percentage of their peers shared their responses on the questionnaire. It was found that when highly prejudiced Whites were given consensus information stating that a high (versus low) percentage of their peers agreed with their prejudicial beliefs, these individuals sat farther away from a Black person and ascribed more unfavourable traits to Blacks. In contrast, low prejudice participants sat closer to a Black person when they were given information that a high percentage of their peers shared their beliefs, and ascribed more favourable traits to Blacks than those who did not have their beliefs validated in this way. Therefore, when people believe that their intergroup attitudes are commonly held by members of their group, these attitudes are maintained and acted upon, both behaviourally and cognitively. Other studies have found evidence that group consensus estimates can affect individuals' attitudes (e.g., Haslam et al., 1996; Stangor et al., 2001; Wittenbrink & Henly, 1996), but Sechrist and Stangor's (2001) coverage of the effect of consensus information consistent with one's own responses on behaviours/cognitions is key. Thus, estimating that others hold attitudes similar to one's own (i.e., if one projects) can be quite dangerous, especially when these are negative intergroup attitudes.

Thus, projection of intergroup attitudes can essentially give people an 'excuse' to be prejudiced. This idea is consistent with research stating that people release their

prejudices only when means through which to justify their prejudice are present (e.g., the perceived support of others; Crandall & Eshelman, 2003). This “everybody knows it’s true” (Strube & Rahimi, 2006) phenomenon may be unmotivated or motivated; the current research addressed this issue.

Meta-stereotyping

In addition to social projection, the current research investigated *meta-stereotyping*. These two processes are rarely studied simultaneously, but it is useful to do so in the context of intergroup relations, as both reflect important intergroup perceptions, and meta-stereotypes may be formed *through* outgroup social projection. Social projection involves inferring the general beliefs of the ingroup (and to a lesser extent the outgroup); meta-stereotyping, in contrast, involves inferring the beliefs of the outgroup *about one’s group or one’s self*.

Meta-stereotypes are beliefs concerning perceived stereotypes held by outgroup members about one’s own group (Vorauer et al., 1998). To illustrate, heterosexual White Canadians might believe they are perceived to be selfish by Aboriginals, polite by Americans, and uptight by homosexuals (Vorauer et al., 1998). Meta-stereotypes are a specific form of meta-perception. The term meta-perception refers to the impressions people believe they make on others. Most research on meta-perceptions has centered on interpersonal situations; only recently has meta-perception research been extended to the intergroup context (e.g., see Klein & Azzi, 2001; Méndez, Gómez, & Tropp, 2007; Sigelman & Tuch, 1997; Vorauer et al., 1998). In their review of meta-perception research, Frey and Tropp (2006) discuss several techniques by which meta-perceptions are formed (adapted from Ames’s (2004a) ‘mind reading’ tools). One of these techniques

involves ‘relying on stereotypes.’ This technique is particularly relevant in intergroup contexts. Vorauer et al. (1998) suggest that “meta-stereotypes guide individuals’ meta-perceptions during the course of their interactions with outgroup members” (pp. 917-918). Group members are generally aware of the stereotypes ascribed to their group (e.g., Frey & Tropp, 2006; Klien & Azzi, 2001), and may expect to be viewed in terms of these stereotypes, especially during intergroup interactions (e.g., Vorauer, Hunter, Main, & Roy, 2000; Vorauer & Kumhyr, 2001; Vorauer et al., 1998). The current research focused on the meta-stereotype that Whites believe they are viewed to hold negative intergroup attitudes (i.e., be prejudiced) by Blacks. Specifically, the current research examined the meta-stereotype that one or one’s group holds an anti-outgroup bias (Study 1) and the meta-stereotype that one (or one’s group) holds a pro-ingroup bias, or favours the ingroup (Study 2). Whereas other theorists have used the term “meta-stereotype” to refer to perceptions of many different attributes (e.g., Vorauer et al., 1998), in the present research this term refers to meta-stereotypes about *being prejudiced*.

Issues of Concern

Like social projection, there are several issues of concern present in the meta-stereotype literature. A brief coverage of several of these issues follows, with the focus upon those issues relevant to the current research.

Measurement/conceptualization of meta-stereotypes. Vorauer et al. (1998), who conducted the first major study of meta-stereotypes, measured meta-stereotypes using diagnostic ratios. The diagnostic ratio method (Martin, 1987; McCauley & Stitt, 1978; McCauley, Stitt, & Segal, 1980; Stephan et al., 1993) normally involves a ratio of target ratings of the percentage of specific group members holding an attribute over baseline

ratings of the percentage of people in general holding the attribute. Attributes with a diagnostic ratio significantly different from 1 (higher or lower) are considered to be part of the stereotype of the group of interest. Vorauer et al. (1998) modified the typical diagnostic ratio method to create greater psychological reality for participants. In their studies, “the target ratings involved estimating Aboriginal Canadians’ beliefs about the percentage of White Canadians possessing each of a series of traits. The baseline ratings involved estimating Aboriginal Canadians’ beliefs about the percentage of Aboriginal Canadians possessing each of the traits” (Vorauer et al., 1998, p. 920). Using this method, Vorauer et al. (1998) obtained a diagnostic ratio of 10.26 for the trait ‘prejudiced’.

However, Vorauer et al.’s (1998) work differed from the current research in several ways. In particular, Vorauer and colleagues were attempting to determine which of a large number of attributes were included in the meta-stereotype Whites’ believed to be ascribed to them by Aboriginals. The current research however, focuses upon a single attribute (anti-outgroup prejudice or ingroup favouritism). The diagnostic ratio method can be a useful measure to determine the inclusion of an attribute in a meta-stereotype (e.g., Vorauer et al., 1998). However, the focus of the current research was to examine meta-stereotypes referring to one specific attribute, not to determine which of many attributes was part of a global meta-stereotype. The diagnostic ratio method then, was unnecessary and not suitable for the purposes of the current research (i.e., to examine a “piece” of a meta-stereotype likely consisting of many attributes). Thus, the current research did not use the diagnostic ratio method (see also Méndez et al., 2007), but rather measured meta-stereotypes by examining mean meta-stereotype ratings given on response scales. In addition to being more suitable for the current purposes, this method

is less contaminated by perceptions about other groups than the diagnostic ratio method.

Self versus group. When referring to meta-stereotypes, an important distinction to be made is the distinction between meta-stereotypes applying to *one's group*, and meta-stereotypes applying to *one's self*. Meta-stereotypes by definition refer to beliefs held about one's group, "a person's beliefs regarding the stereotype that out-group members hold about his or her *own group*" (emphasis added; Vorauer et al., 1998, p.917). This is what is most commonly referred to by the word "meta-stereotype." However, one can also interpret the stereotype an out-group holds about the self personally. So-called "meta-stereotypes of self" can be examined in two ways, which largely depend on wording. The first type is the stereotype one believes an outgroup holds about him/her personally *as a member of his/her ingroup* (i.e., what stereotypes might a Black person hold about you personally, as a White person?). The second type is the stereotype one believes an outgroup holds about him/her personally *as an individual rather than a group member* (Méndez et al., 2007) (i.e., what stereotypes might a Black person hold about you personally?). Although the differences between these two types of self-meta-stereotypes are slight, it is possible that they operate differently (as suggested by Méndez et al., 2007), and both were investigated by the current research. Thus, meta-stereotypes can be beliefs regarding stereotypes held by an outgroup about an ingroup, an individual as a group member, or an individual independently. Méndez et al. (2007) call for research on the distinction between these differing types of meta-stereotypes.

For clarity purposes, in keeping with Méndez et al. (2007), I will describe: (a) '*meta-stereotype of ingroup*' as meta-stereotypes referring to the ingroup; (b) '*meta-stereotype of self as ingroup member*' as meta-stereotypes referring to individuals as

group members; and (c) '*meta-stereotype of self as individual*' as meta-stereotypes referring to individuals, independent of group membership (see Appendix A). It has been found that meta-stereotypes of the ingroup tend to be similar to meta-stereotypes of self as ingroup member in that those who hold a negative meta-stereotype of the ingroup tend to also hold a negative meta-stereotype of the self as ingroup member (Méndez et al., 2007). This finding needs to be further investigated, though. Meta-stereotypes of self as individual have not been investigated in any studies of which I am aware. Méndez et al. (2007) predict that meta-stereotypes of self as individual would likely be similar to meta-stereotypes of self as ingroup member, but recognize that differences are possible. The current research investigated and compared meta-stereotype of ingroup and meta-stereotype of self as individual in Study 1, and in Study 2 investigated and compared all three types of meta-stereotypes mentioned.

Another important distinction is that meta-stereotypes may consist of the perceived beliefs held by an entire out-group, or by a single out-group member. During a one-on-one intergroup interaction, the perceived beliefs of only one out-group member are typically inferred. Vorauer et al. (1998) refer to meta-stereotypes regarding *one specific out-group member's* perceived beliefs as 'personalized meta-stereotypes'. *Personalized meta-stereotypes* can be any one of the three types mentioned above (meta-stereotypes of ingroup, meta-stereotype of self as ingroup member, or meta-stereotypes of self as individual). Personalized meta-stereotypes tend to be different from meta-stereotypes consisting of the perceived beliefs of an entire out-group in that the person rating the personalized meta-stereotype will (or perceives s/he will) actually interact with the out-group member whose thoughts s/he is inferring, and be better able to infer and/or

influence this out-group member's beliefs (see Vorauer et al., 1998). The current research investigated both personalized meta-stereotypes (Study 2) and those based on the apparent beliefs of an entire out-group (Studies 1 & 2).

Meta-stereotypes (of ingroup) as formed through outgroup projection. As mentioned, meta-stereotypes refer to the stereotypes that one believes an outgroup holds concerning one's ingroup. Previous research has suggested that in some cases, meta-stereotypes can be formed through processes of outgroup social projection. This possibility is derived from Krueger's (1996) work. Recall that as part of his projection study, Black and White participants rated their respective ingroups on several attributes from the perspective of the other group. To clarify, Blacks rated the average responses made by Whites about Blacks, and Whites rated the average responses about Whites made by Blacks. Krueger found that both Blacks and Whites believed they were viewed more negatively by the outgroup than they actually were. Although Krueger did not label it as such, participants expected to be negatively stereotyped by their outgroup, otherwise known as a "meta-stereotype." Krueger believed this provided evidence for the outgroup projection of ingroup favouritism (at the level of intergroup target category,⁴ see Judd et al., 2005). Although he did not find consistent evidence of ingroup favouritism on behalf of each group, he assumed that both groups favoured their ingroup but were not aware of it. Thus, Krueger asserted that because White and Black participants demonstrate ingroup favouritism, these participants assumed that their outgroups (Blacks and Whites, respectively) favoured *their own* ingroups (Blacks and Whites) as well. For instance, a White participant expected her outgroup (Blacks) to rate *their* outgroup (Whites)

⁴ An example of intergroup target category level outgroup projection: "the more I favour my ingroup (Whites), the more I believe my outgroup (Blacks) favours *their* ingroup (Blacks)."

negatively because they rate their own ingroup (Blacks) positively.

Although this explanation is compelling (albeit complex), I contend that Krueger did not illustrate projection of ingroup favouritism here due to a lack of personal ratings of ingroup favouritism on behalf of each group. Nevertheless, Krueger's explanation is certainly viable. It is possible that people expect their group to be viewed in terms of negative stereotypes by the outgroup because they themselves view the outgroup in terms of negative stereotypes (intergroup target category level outgroup projection, see Judd et al., 2005). Another possibility is that people expect their group to be viewed in terms of negative stereotypes by the outgroup because they themselves view the ingroup in terms of negative stereotypes (specific category level outgroup projection,⁵ see Judd et al., 2005). In other words, the more negatively one sees one's ingroup (e.g., Whites), the more negatively one expects the outgroup (e.g., Blacks) will view his/her group (e.g., Whites) as well. This explanation is only applicable to stereotypes that are likely to be ascribed to both the outgroup and the ingroup however, which is not the case for all stereotypes. For example, it is likely that a White person would ascribe the stereotype 'aggressive' to Blacks, but not to Whites, given that this stereotype is commonly ascribed to Blacks (e.g., Devine, 1989) rather than Whites. One stereotype that does meet this criterion, however, is the stereotype "prejudiced." The attribute "prejudiced" is not unique to either group, and thus could be ascribed to Whites or Blacks.

In the current context then, it is possible that Whites believe that Blacks view Whites as prejudiced (hold a 'prejudiced' meta-stereotype) because Whites believe that Blacks are prejudiced ("I (a White person) think Blacks (my outgroup) are prejudiced, so

⁵ Example of specific category level projection: "the more I favour Whites (my ingroup) the more I believe my outgroup (Blacks) favours Whites".

Blacks must think Whites (their outgroup) are prejudiced”), representing outgroup projection at the level of *intergroup target category* (see Judd et al., 2005), consistent with Krueger (1996). Or, Whites might believe Blacks view Whites to be prejudiced because Whites believe that Whites are prejudiced (“I think Whites are prejudiced, so Blacks must think Whites are prejudiced as well”), representing outgroup projection at the level of *specific category* (see Judd et al., 2005). Thus, some meta-stereotypes, including the one investigated by the current research may develop through outgroup social projection. The current research examined this possibility.

Meta-stereotypes in the Context of Intergroup Relations

Whereas studies of social projection take place in various domains, meta-stereotypes are always studied in the context of intergroup relations. A brief description of several influential studies regarding meta-stereotyping in this context is important. The study performed by Krueger (1996) described previously foreshadowed meta-stereotype literature. As mentioned, Krueger’s investigation of “projective ingroup bias” can be interpreted in terms of meta-stereotypes. He found that both Blacks and Whites believed they were viewed unfavourably in terms of the attributes rated by their outgroups, implying that both groups perceived that they were negatively stereotyped. This study served as an important stepping stone for meta-stereotype research.

Vorauer et al. (1998) conducted three influential studies on meta-stereotypes. In their first study, Whites rated their beliefs regarding Aboriginals’ stereotypes of Whites, finding 36 stereotypes that Whites considered Aboriginals to hold about Whites. The major themes of these stereotypes included egocentrism, lack of feeling, high status, ambition, and prejudice. These results determined that Whites held a shared overall

negative meta-stereotype involving several traits regarding how Aboriginals perceive Whites. The meta-stereotype was compared to the *other-stereotype* (i.e., Whites' beliefs about Aboriginals, see Appendix A). It was found that three traits (prejudiced, insensitive, and disrespectful) were included in both the meta-stereotype and the other-stereotype. The meta-stereotype was also compared to Whites' views regarding Whites. This examination revealed that Whites believed Aboriginals viewed Whites more negatively than Whites themselves viewed their group on the majority of statistically significant traits compared.

In their second study, Vorauer et al. (1998) investigated meta-stereotypes in terms of an anticipated intergroup interaction. That is, they examined Whites' meta-stereotype of self as ingroup member based on the beliefs of one anticipated Aboriginal interaction partner. Each participant rated the expectations that their Aboriginal partner would have about her/him according to her/his racial group on both open- and closed-ended measures. Overall, Whites indicated that they would be viewed by their Aboriginal partner in terms of more negative than positive traits. Also, over 50% of participants expected their partner would view them to be unfair, egocentric, prejudiced, selfish, closed-minded, and arrogant. Thus, this study determined that Whites expected to be viewed in terms of the meta-stereotype by an individual outgroup member. Also, it was found that the more participants expected to be viewed in terms of the meta-stereotype, the less they expected to enjoy the interaction, and the more they expected to experience negative emotions. Vorauer et al.'s Study 3, which involved the exchange of video messages between each participant and an Aboriginal or White participant, provided similar results. Results new to Study 3 indicated that highly prejudiced Whites expected

to be viewed more in terms of the meta-stereotype with an Aboriginal partner than a White partner, and that participants who felt stereotyped reported decreased self-esteem and self-concept clarity, illustrating that feeling personally stereotyped threatens the self-concept.

Vorauer et al.'s (1998) studies were the first influential studies on meta-stereotypes. These studies established that Whites hold a negative meta-stereotype regarding how their group is viewed by Aboriginals, that Whites expect to be viewed in terms of this meta-stereotype prior to an interaction with an Aboriginal person, that prejudiced Whites perceive that they are stereotyped by Aboriginals, and that feeling personally stereotyped may lead to negative intergroup contact expectations and self-concept threat.

Similar to Vorauer et al. (1998), Vorauer and Kumhyr (2001) found White individuals (especially those high in prejudice) expect personally to be viewed negatively by Aboriginals. Judd et al. (2005) found that when comparing Whites' responses with those of several different outgroups (Asians, Hispanics, and Blacks), participants consistently⁶ reported that outgroups would view the participant's ingroup more negatively in terms of intergroup attributes and stereotypicality than their own group, suggesting that participants thought that their group was negatively stereotyped by their respective outgroups. Méndez et al. (2007) found that Spanish nationals expected to be viewed by immigrants in terms of stereotypes. More specifically, they found individuals who held negative meta-perceptions (i.e., meta-stereotypes) of the participant's ingroup also held a negative meta-stereotype of self as ingroup member, and those who viewed themselves as prototypical members of their group held more negative meta-stereotypes.

⁶ With the exception of one finding (see Judd et al., 2005)

Additionally, evidence of meta-stereotypes held by minority groups has been cited by previous research (see Shelton, Richeson, & Vorauer, 2006). Overall, these studies illustrate a tendency for group members to expect to be viewed in terms of their ingroup's stereotypes by outgroups.

Negative Impact of Meta-stereotypes

Although meta-stereotypes can be useful to people in satisfying a 'need for prediction' (Vorauer et al., 1998), they do have the potential to be quite problematic. Similar to the projection of intergroup attitudes, holding a negative meta-stereotype about the perceived intergroup attitudes of one's self or one's group may also serve as a means to perpetuate and justify prejudice. Further, holding the meta-stereotype that one's self or group is viewed to be prejudiced can have a negative impact on intergroup contact, in turn perpetuating prejudice.

Prejudice justification and perpetuation. Meta-stereotypes have the potential to justify or perpetuate prejudice. If a person believes one's self or one's group to be viewed negatively by a group (e.g., viewed to be highly prejudiced), one might feel that this justifies viewing and treating that group negatively. This meta-stereotype could also lead to a self-fulfilling prophecy (e.g., Hilton & Darley, 1991), whereby the person actually does behave in a prejudiced manner, perpetuating prejudice. Thus, prejudice can be viewed as a retaliation in response to the perception that one is stereotyped by a group ("They hate us, therefore we hate them").

Also, meta-stereotypes induce anxiety (Vorauer et al., 1998, see below for a more detailed discussion), which can encourage people to view outgroup members in stereotypical terms. Experiencing anxiety can interfere with information processing and

impair cognitive capacity (Wilder & Shapiro, 1989). Thus, people may have the ability to access only stereotypical information, unable to process alternatives. When people feel threatened, as can occur with meta-stereotypes (Shelton et al., 2006), they are more likely to view the outgroup in terms of negative stereotypes (see Fein & Spencer, 1997; Kunda & Sinclair, 1999). This is another means by which meta-stereotypes can perpetuate prejudice.

Impact on intergroup contact. Intergroup interactions are frequently negative. Often people expect such interactions to be anxiety-provoking (Plant, 2004; Stephan & Stephan, 1985, 1989) and react negatively to contact (e.g., Britt, Boniecki, Vescio, Biernat, & Brown, 1996; Butz & Plant, 2006; Devine, Evett, & Vasques-Suson, 1996). These expectations can arise out of several types of concerns, including meta-stereotypes and *other-stereotypes*. Whereas meta-stereotypes consist of one's beliefs regarding the outgroup's thoughts about one's self and/or group, other-stereotypes refer to one's perceived *beliefs about the out-group* (Vorauer et al., 1998), commonly referred to as "stereotypes."

There is some question as to whether the most negative impact on intergroup interaction arises from meta-stereotypes or other-stereotypes. The current research focuses on the characteristic "prejudiced" which has been found to be included both in Whites' meta- and other-stereotypes (Vorauer et al., 1998). People may expect intergroup interactions to be negative based on concerns about being viewed in a prejudiced manner (Butz & Plant, 2006; Shelton, 2003). In other words, they may expect to be viewed according to the "prejudiced" meta-stereotype. Alternatively, people may expect intergroup interactions to be negative based on concerns that the outgroup does not wish

to engage in intergroup contact (Plant & Devine, 2003; Shelton & Richeson, 2005), perhaps due to the other-stereotype that the out-group is “prejudiced.” Vorauer et al. (1998) suggest (but do not experimentally test the potential) that meta-stereotypes have a greater influence on intergroup interactions than other-stereotypes. The current research addressed this important assertion.

It may be the case that, depending on the group in question, meta-stereotypes and other-stereotypes differ in their impact on whether the interaction is construed negatively. Perhaps majority groups are most concerned with what others allegedly think of them (i.e., meta-stereotypes), whereas minority groups are more concerned with being a target of prejudice (i.e., other-stereotypes; see Shelton, 2003). Indeed, majority group members tend to be aware that the minority group may view them to be prejudiced (Vorauer et al., 1998, 2000) and minority group members tend to be aware of the possibility that majority groups may view their group negatively (Miller & Meyer, 1998). Shelton (2003) found that Whites (majority group members) who tried to appear non-prejudiced (i.e., the prejudiced meta-stereotype was salient) rated their interaction with a Black person more negatively than Whites who were not instructed to appear non-prejudiced. Additionally, Blacks who were told that their White interaction partner was prejudiced (i.e., the other-stereotype was salient) displayed more anxious nonverbal behaviour (fidgeting), but enjoyed the interaction more⁷ than Blacks not given this information.

The current research (Study 2) compared the potential impact of meta-stereotypes and other-stereotypes on an anticipated intergroup interaction. It is possible that when people believe they are viewed negatively by a group in terms of meta- or other-

⁷ This finding that Blacks enjoyed the interaction more was accounted for by several explanations, the most plausible being that when expecting to interact with a prejudiced partner, Blacks may have employed social skills in an attempt to have a successful interaction (see Shelton, 2003).

stereotypes, this may lead to negative emotional reactions toward the outgroup and outgroup interactions (Vorauer et al., 1998). These negative emotional reactions (e.g., intergroup anxiety) may in turn lead to outgroup avoidance, rudeness and condescension (Blair, Park, & Bachelor, 2003), damaging intergroup interactions and perpetuating prejudice. As Vorauer et al. (1998) discuss, when one feels stereotyped by an outgroup, avoidance of the outgroup may result due to anxiety (Dovidio, Gaertner, & Kawakami, 2003; Plant & Devine, 2003). When such contact is unavoidable, interactions are likely to be hostile.

It is particularly troubling that these types of meta-stereotypes can lead to avoidance of intergroup contact, as intergroup contact is well established as a key means to improve intergroup relations and reduce prejudice (see Pettigrew & Tropp, 2006). When people avoid intergroup interactions based on meta-stereotypes, prejudice is perpetuated. Shelton and Richeson (2005) found that Whites and Blacks both wanted more contact with their respective outgroups but believed their outgroups did not reciprocate this desire. This is a prime example of the danger of meta-stereotypes: one may think s/he is viewed negatively by a group, and assuming that members of that group do not want contact with him/her, avoid members of that group, even when s/he desires contact. Therefore, meta-stereotypes may lead to avoidance of desired contact that could potentially be very beneficial for intergroup relations; this is unfortunate and ironic.

Thus, meta-stereotypes may lead to prejudice justification, the application of negative stereotypes to outgroups, negative emotional reactions regarding intergroup contact, and the avoidance of intergroup contact, all of which are detrimental to intergroup relations, and can also contribute to the maintenance of prejudice.

THE CURRENT RESEARCH

The current research centred on perceptions of ingroup (and outgroup) prejudice, and perceptions of outgroup views of ingroup prejudice. Specifically, the current research explored the social projection of intergroup attitudes (essentially, perceptions of being prejudiced or not), and the meta-stereotype of being viewed to hold negative intergroup attitudes (i.e., anti-outgroup bias or pro-ingroup bias) by the outgroup. As stated previously, few studies have jointly examined social projection and meta-stereotypes, but it is meaningful to do so, especially in an intergroup domain. Each reflects a means to infer the thoughts of others, and both can potentially have a negative impact on intergroup relations. This research investigates these processes in the context of White-Black relations.

Study 1

Study 1 served as a preliminary investigation of social projection and meta-stereotypes in the context of White-Black intergroup relations. It primarily investigated whether White Canadians: (a) project intergroup attitudes onto their ingroup (Whites) and/or their outgroup (Blacks); (b) hold a shared meta-stereotype that their group (Whites) is viewed by Blacks to be prejudiced; and (c) believe that Blacks viewed them personally to be prejudiced (i.e., whether they believe the meta-stereotype applies to the self). Study 1 also investigated: (d) the relationship between the projection of intergroup attitudes and prejudiced meta-stereotypes (never previously examined), and (e) several potential correlates of each construct.

Hypotheses

Projection

It was expected that Whites would project their intergroup attitudes onto fellow Whites. This prediction was based in previously stated evidence that people project basic attitudes (see Mullen et al., 1985) and specific intergroup beliefs (Judd et al., 2005; Krueger, 1996; Strube & Rahimi, 2006). It was expected that if Whites tend to project specific intergroup beliefs (e.g., poor, aggressive), they would also project general intergroup attitudes (e.g., prejudice). This has only been established in unpublished work using an American sample (Hodson et al., 2000). It also was expected that Whites would project their intergroup attitudes onto Blacks, given evidence that outgroup projection has been found to exist in intergroup domains (Hodson et al., 2000; Judd et al., 2005; Krueger, 1996). Outgroup projection was expected to be slightly weaker than ingroup projection (see meta-analysis on general attitudes by Robbins & Krueger, 2005).

Meta-stereotypes

It was expected that Whites would hold a shared negative stereotype that they are viewed negatively (i.e., as prejudiced) by Blacks. This prediction was based on evidence that people generally expect to be viewed negatively by outgroup members (e.g., Krueger, 1996). Also, it has been found that Whites believe they are viewed to be prejudiced by Aboriginals (Vorauer et al, 1998), and negatively in other intergroup terms by a number of other groups, including Blacks (Judd et al., 2005). Thus, it was predicted Whites would believe this stereotype to be held by Blacks. With regard to meta-stereotypes of self as individual, it was expected that Whites who held negative meta-stereotypes of ingroup would also hold negative meta-stereotypes of self as individual. It was expected, based on the suggestion by Méndez et al. (2007), that if one believes that her/his group is perceived to be prejudiced, one will also expect that s/he will be perceived to be prejudiced. This potential has been unexplored previously.

Relation between Projection of Intergroup Attitudes and Prejudiced Meta-stereotypes.

As stated previously, social projection and meta-stereotypes are processes people use to infer the thoughts of others. It is possible that meta-stereotypes are the product of social projection. Previous research (e.g., Krueger, 1996) has led to the suggestion that meta-stereotypes may form through outgroup projection, specifically outgroup projection at the level of intergroup target category (see Judd et al., 2005). I extend this suggestion by hypothesizing that prejudiced meta-stereotypes of ingroup are formed via both the ingroup and outgroup projection (both intergroup target and specific category levels) of intergroup attitudes.

As mentioned, it was expected that participants would project their intergroup attitudes onto their ingroup. To illustrate, the more (or less) prejudiced one views the self, the more (or less) prejudiced one views the ingroup, reflecting ingroup projection (e.g., “I [a White person] am highly prejudiced, and Whites are highly prejudiced too”). Upon establishing (through ingroup projection) that one’s ingroup is highly prejudiced (or not), one may subsequently view his/her outgroup to view their ingroup as high (or low) in prejudice (i.e., form a meta-stereotype). This meta-stereotype rating would reflect outgroup projection (e.g., “The more (less) I view Whites to be prejudiced, the more (less) prejudiced Blacks see Whites”).

It was also expected that participants would project their intergroup attitudes onto their outgroup. To illustrate, the more (or less) prejudiced one views the self, the more (or less) prejudiced one views the outgroup. This reflects outgroup projection (e.g., “I [White] am highly prejudiced, and Blacks are highly prejudiced too”). So, after perceiving (through outgroup projection) that one’s outgroup is highly prejudiced (or not), one would then view her/his outgroup to view their ingroup as high (or low) in prejudice (meta-stereotype). This reflects outgroup projection (e.g., “The more (less) I view Blacks [my outgroup] to be prejudiced, the more prejudiced Blacks see Whites [their outgroup]”).

Thus, it was predicted that prejudiced meta-stereotypes would be derived from ingroup projection and outgroup projection (at the level of specific category) of intergroup attitudes operating in combination with two-step outgroup projection at the level of intergroup target category.⁸ This hypothesized pattern is presented in Figure 1.

⁸ This hypothesis refers only to meta-stereotypes of ingroup; the model contains only group-relevant perceptions which are clearly not as relevant to meta-stereotypes of self as individual.

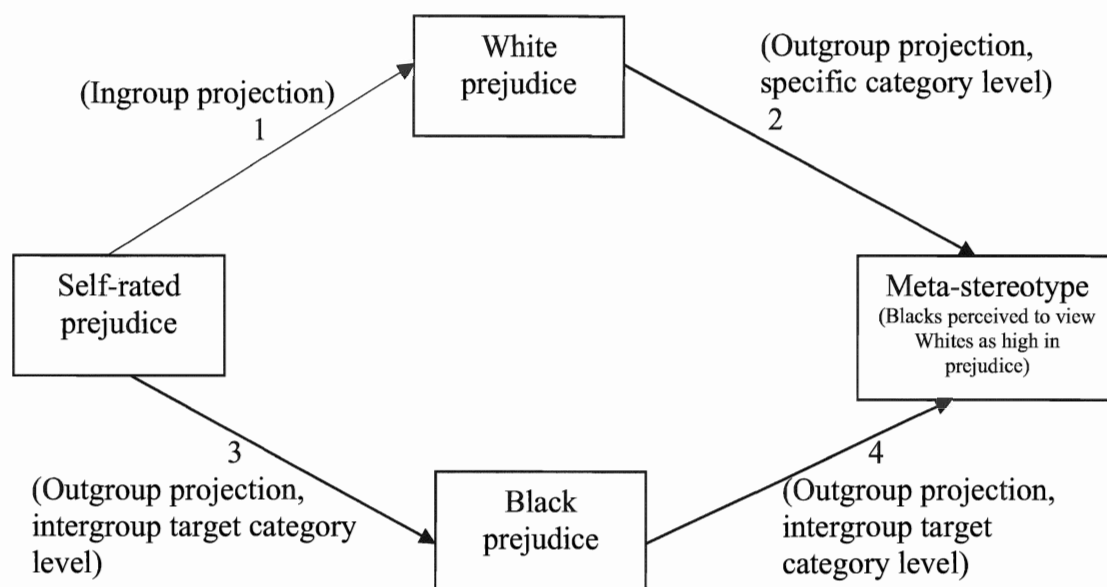


Figure 1. Hypothesized relationship between projection of intergroup attitudes and prejudiced meta-stereotypes among Whites. Path 1 represents ingroup projection, Path 2 represents outgroup projection at the level of specific category (e.g., “Blacks see Whites as I see Whites”), and Paths 3 and 4 represent outgroup projection at the level of intergroup target category (e.g., Path 3 = “Blacks’ perceptions about their outgroup are similar to my outgroup perceptions”; Path 4 = “Blacks perceive their outgroup as I perceive my outgroup”).

Potential Correlates

Several correlates of ingroup social projection of intergroup attitudes and the meta-stereotype that one's self or group is viewed to be prejudiced were examined. Many were examined for exploratory purposes, but several speculative hypotheses follow.

Prejudice. Personal levels of prejudice were expected to be correlated positively with both the projection of intergroup attitudes and the meta-stereotype that one or one's group is viewed negatively in terms of intergroup attitudes. It was speculated that those higher in prejudice would project intergroup attitudes more strongly, as highly prejudiced people have the most to justify and "normalize", and would hence project their intergroup attitudes to a greater extent. A recent study found that projection of intergroup beliefs was higher for those high in social dominance orientation and right wing authoritarianism, two well-established correlates of prejudice (Strube & Rahimi, 2006).

With regard to meta-stereotypes, it was thought that people who were higher in prejudice would expect themselves and their group to be viewed more negatively in terms of prejudice by the outgroup. Despite the hypothesis that this meta-stereotype was expected to apply overall, regardless of personal prejudice level, those higher in prejudice were expected to hold *more* negative meta-stereotypes. This contrasts with Vorauer et al.'s (1998) finding that those low in prejudice held a more negative ingroup meta-stereotype than those high in prejudice (they argue due to ingroup identification level, see below), but is in line with Vorauer et al.'s (1998) finding that highly prejudiced people do hold negative meta-stereotypes and are expected to be viewed personally by the outgroup in terms of negative meta-stereotypes. As mentioned above though, Vorauer et al.'s (1998) research involved a meta-stereotype that was made up of a large number of

attributes, whereas the current research examines only one attribute, being prejudiced.

Those low in prejudice may expect their group to be viewed negatively overall (i.e., rate a meta-stereotype referring to several attributes negatively) as Vorauer et al. (1998) found, but when referring specifically to prejudiced meta-stereotypes, it is predicted that those more highly prejudiced will expect the self and group to be perceived this way, as would be expected intuitively.

Ingroup identification. People naturally differ in their level of identification with their ingroup (e.g., Hodson & Esses, 2002; Hodson, Harry, & Mitchell, 2009; Spears, Doosje, & Ellemers, 1997), even minimal ingroups (e.g., Hodson, Dovidio, & Esses, 2003). The extent to which one identifies with his/her ingroup is likely to have an effect on both projection and meta-stereotypes. As stated previously, there tends to be more evidence for projection of basic attitudes to the ingroup than the outgroup. People tend to think that they share similar perceptions with those to whom they are similar in characteristics such as age, sex, and ethnicity (Vorauer et al., 1998), which may explain why ingroup projection tends to be stronger than outgroup projection (Robbins & Krueger, 2005). Thus, it is hypothesized that those who identify more (*vs.* less) with their ingroup will display stronger ingroup projection and weaker outgroup projection (for related findings see Smith & Henry, 1996).

Vorauer et al. (1998) explained their findings regarding prejudice level and meta-stereotypes as a function of identification. The authors found that those low in prejudice held a more negative meta-stereotype and reasoned (but did not test) that this was due to their lack of identification with the ingroup. Less prejudiced people were thought to have little difficulty rating the ingroup to be perceived negatively because they presumably

did not identify with that group. However, Vorauer et al. (1998) did find that highly prejudiced people held negative meta-stereotypes (just not as negative as those low in prejudice) and expected to be viewed personally by the outgroup in terms of negative meta-stereotypes. The authors suggested ingroup identification may have played a role in these highly prejudiced people's negative meta-stereotypes of self. This is consistent with the suggestion of Frey and Tropp (2006) that those who are more highly identified with their group will particularly expect to be personally viewed in terms of group membership. Similarly, Méndez et al. (2007) found that those high in prototypicality (those who view themselves as prototypical members of their ingroup), a construct related to identification, held more negative meta-stereotypes of self as ingroup member.

It was predicted that both types of meta-stereotypes investigated (meta-stereotype of ingroup and meta-stereotype of self as individual) would be positively correlated with ingroup identification (i.e., the more one identifies with the ingroup, the more negative the meta-stereotype). This prediction was consistent with research presented above referring to meta-stereotypes of self, but not meta-stereotypes of ingroup. Regardless, this prediction was made regarding meta-stereotypes of ingroup given: (a) differences between the meta-stereotype investigated currently versus those investigated by Vorauer et al. (1998), and (b) that the hypothesis by Vorauer et al. (1998) regarding ingroup identification was not tested. My prediction is more intuitive, because people highly identified with their ingroup should be more sensitive to the meta-stereotypes the ingroup holds about how the outgroup views them.

Social dominance orientation. Social dominance orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994) is characterized by the support of group dominance,

social hierarchy, and inequality and is considered to be one of “the strongest individual-difference predictors of prejudice” (Duckitt, 2005, p. 402). Due to its strong relation with prejudice, SDO was expected to relate to social projection of intergroup attitudes and meta-stereotypes. Strube and Rahimi (2006) found that the most projection of intergroup beliefs occurred for individuals with both high SDO and right wing authoritarianism. As noted by those authors, negative beliefs regarding outgroups are likely maintained through social projection, especially for those who are most disposed to prejudice. Thus, I also predicted that those high in SDO would be likely to display more projection of intergroup attitudes. There is no research available concerning the relation between meta-stereotypes and SDO. However, on the basis of the strong relation between SDO and prejudice, it was expected that the relation between meta-stereotypes and SDO would be similar to that expected between meta-stereotypes and prejudice. Whites higher in SDO were expected to possess more negative meta-stereotypes.

Right-wing authoritarianism. Right-wing authoritarianism (RWA; Altemeyer, 1996, 1998) is characterized by submission to established authority, strong adherence to social convention endorsed by said authority, and aggression toward those who disobey convention. RWA is generally considered the second strongest individual-difference predictor of prejudice (Duckitt, 2005). Those higher in RWA demonstrate greater social projection of stereotypic traits (Strube & Rahimi, 2006). Thus, those higher (*vs.* lower) in RWA were expected to demonstrate more projection of intergroup attitudes. There is no research available concerning the relation between meta-stereotypes and RWA, but findings similar to those predicted for SDO were expected based on the similar relations between RWA and prejudice and SDO and prejudice.

Prejudice justification. People differ in the extent to which they view prejudice as justified. People may view prejudice as justified because outgroups are threatening, prejudice is beyond their control, or is a 'fact of life' (Esses & Hodson, 2006; Hodson & Esses, 2005). People may also justify prejudice based on the beliefs of others, such as the perceived intergroup beliefs of ingroup members or outgroup members (Hodson et al., 2000). Thus, the projection of intergroup attitudes and meta-stereotypes may be related to prejudice justification.

Based on the results of an unpublished study by Hodson et al. (2000) it was expected that people who projected negative intergroup attitudes more (to the ingroup) would explicitly justify their prejudicial beliefs based on the beliefs of the ingroup. Similarly, it was expected that those who believed their group (or themselves) was viewed negatively by the outgroup (i.e., projected to the outgroup or held negative meta-stereotypes) would justify their prejudices based on the perceived beliefs of the outgroup. Thus, projection and meta-stereotypes (both types) were expected to be correlated positively with a general measure of prejudice justification.

Outgroup avoidance. People vary in desires to engage in outgroup contact. Specifically, people who are high in intergroup anxiety and prejudice may be motivated to avoid intergroup interactions (Dovidio et al., 2003; Fiske & Ruscher, 1993; Goffman, 1963; Plant & Devine, 2003; Stephan & Stephan, 1985). Thus, one who avoids outgroup contact is more likely to be prejudiced and project intergroup attitudes more strongly. Thus, a positive correlation between outgroup avoidance and projection was predicted.

More relevant is the relation between meta-stereotypes and outgroup avoidance. As mentioned above, anxiety is likely to result as a product of negative meta-stereotypes,

and anxiety is likely to lead to avoidance of intergroup contact. Thus, a positive correlation was expected between outgroup avoidance and negative meta-stereotypes, and for exploratory purposes it was examined whether this relation was mediated by intergroup anxiety (see below). Previous research has found that those who hold more negative meta-stereotypes are less interested in intergroup contact (Méndez et al., 2007), suggesting that more negative meta-stereotypes in turn, are likely to be associated with avoidance of intergroup contact.

Intergroup anxiety. Intergroup anxiety refers to the apprehension people may experience during (or at the prospect of) an interaction with an outgroup member(s) (Stephan & Stephan, 1985). Intergroup anxiety predicts negative attitudes toward groups (e.g., Stephan et al., 2002), such as prejudice. Given that people sometimes project more strongly in an effort to reduce general life anxieties (Arndt, Greenberg, Solomon, Pyszczynski, & Schimel, 1999), it was expected that intergroup anxiety would be related to projection in the present context. Although no research has focused on social projection and intergroup anxiety specifically, it was expected that those higher in intergroup anxiety would more strongly project intergroup attitudes, as those anxious about intergroup interactions may project intergroup attitudes onto their ingroup to ease tensions. Moreover, people higher in intergroup anxiety are more likely to be prejudiced and higher in SDO (see Hodson, 2008), both expected to be linked with increased projection. Thus, predictions regarding intergroup anxiety and projection parallel those regarding prejudice and projection.

Intergroup anxiety is cited in meta-stereotype research as a consequence of the perception that one (or one's group) is viewed negatively by an outgroup (Frey & Tropp,

2006; Vorauer et al. 1998). Méndez et al. (2007) found that those who expected to be viewed negatively by the outgroup reported greater intergroup anxiety. Vorauer and colleagues (1998) suggested that negative meta-stereotypes create intergroup anxiety which in turn leads to hostility during or avoidance of intergroup interactions, but this possibility has yet to be directly tested. It was predicted that the more negative one's meta-stereotypes (both types), the more intergroup anxiety one would possess. For exploratory purposes, it was also investigated whether the relation between meta-stereotypes and outgroup avoidance was mediated by intergroup anxiety, addressing whether those with negative meta-stereotypes avoid outgroups because of increased intergroup anxiety.

Method

Participants

One hundred and thirty-six Brock University students participated in the study for participation marks or monetary payment (5 dollars). Three participants (two Middle Eastern and one Hispanic) who did not categorize themselves as White were excluded from the analyses given the nature of the study, leaving a final sample of 133 (64% female). Participants ranged from age 18-31 ($M = 19.44$, $SD = 2.21$).

Materials

Projection (see Appendix B.3). Projection was measured using the standard social projection paradigm (Marks & Miller, 1987). To measure ingroup projection of prejudice, participants were first asked to indicate whether they were prejudiced against Blacks on a dichotomous measure (yes/no response). Participants also rated the percentage (0-100%) of Whites they believed to be prejudiced against Blacks (i.e., ingroup's anti-outgroup prejudice measure). Based on Ames (2004b), a continuous bias acknowledgment measure of prejudice analogous to the yes/no measure was also included, by which participants rated the extent to which they considered themselves to be prejudiced against Blacks on a scale ranging from not at all (0) to very much (10). To facilitate the measurement of outgroup projection, participants rated the percentage (0-100%) of Blacks they believed to be prejudiced against Whites (outgroup's anti-outgroup prejudice measure). To create a "projection" index for each participant, an absolute difference score was obtained whereby the continuous measure of bias acknowledgement was subtracted from ingroup anti-outgroup prejudice (converted such that both measures were on the same 0-10 scale). Using this difference score, scores of zero would indicate perfect projection, and scores

deviating significantly from zero would indicate a lack of projection. An outgroup projection index was also computed (whereby the continuous measure of bias acknowledgement was subtracted from the outgroup measure of anti-outgroup prejudice), for interest purposes.

Meta-stereotypes (see Appendix B.4). To measure the *meta-stereotype of ingroup*, participants rated the extent to which they believed the average Black person views Whites to be prejudiced against Blacks on a scale ranging from not at all (0) to very much (10), such that higher scores meant more negative meta-stereotypes. To measure the *meta-stereotype of self as individual*, participants rated the extent to which Black people view participants personally to be prejudiced against Blacks on the same scale.

Prejudice relevant measures (see Appendix B.5). To measure personal levels of prejudice, participants completed the Modern Racism Scale (MRS; McConahay, Hardee, & Batts, 1981 [e.g., “Discrimination against Blacks is no longer a problem in North America”]). Previous research has found the scale to be internally consistent (e.g., Cronbach’s $\alpha = .85$ in Plant & Devine, 1998) and McConahay et al. (1981) reported 6 week test-retest reliability correlations for this scale to be .87 and .93. This 7-item measure uses a Likert-type response scale ranging from 0 (strongly disagree) to 4 (strongly agree), with 1 item reverse scored. Higher scores on this scale indicated more prejudice toward Blacks. The continuous bias acknowledgement measure (see projection materials) can also be considered an alternative prejudice measure.

Ingroup identification (see Appendix B.6). To measure identification with one’s ingroup, an identification scale was adapted from Luhtanen and Crocker (1992). This was originally a subscale of a larger scale which demonstrated good internal consistency

(Cronbach's $\alpha = .73$ to $.80$, and the 6 week test-retest reliability correlation of the identification subscale was $.68$ (Luhtanen & Crocker, 1992). This 4-item measure uses a response scale ranging from 1 (strongly disagree) to 7 (strongly agree), with 2 items reverse scored. Higher scores on this scale indicated greater identification. A sample item from the scale is "Being White is an important reflection of who I am."

Social dominance orientation (see Appendix B.7). This variable was measured using the 16-item Social Dominance Orientation scale (Pratto et al., 1994, original Cronbach's $\alpha = .83$, original 3 month test-retest reliability correlation = $.81$) which ranges from 1 (do not agree at all) to 7 (strongly agree). Eight items are reverse scored, and higher scores indicate higher SDO. A sample item from this scale is "Some groups of people are just more worthy than others."

Right-wing authoritarianism (see Appendix B.8). This variable was measured with the 12-item shortened RWA scale (Altemeyer, 1996, original Cronbach's $\alpha = .90$, original 1 week test-retest reliability correlation = $.95$). This scale ranged from 1 (do not agree at all) to 7 (strongly agree), with 6 items reverse scored. Higher scores on this scale indicated higher RWA. A sample item from this scale is "Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibre and traditional beliefs."

Prejudice justification (see Appendix B.9). Justification of prejudice was measured in three ways. To measure the extent to which participants justified their intergroup attitudes based on the beliefs of Whites, a 1-item measure was used (e.g., "To what extent do the attitudes held by Whites validate or explain your own attitude (positive or negative) toward Blacks?"), on a scale ranging from 1 (not at all) to 9 (very

much). The extent to which participants justified their intergroup attitudes based on the beliefs of Blacks was measured in the same manner. A general measure of prejudice justification was also included (adapted from Esses & Hodson, 2006, original Cronbach's $\alpha = .81$). This is a 7-item scale ranging from 1 (not at all) to 7 (very), with higher scores indicating greater justification. A sample item from this scale is "Do you think ethnic prejudice is justifiable?"

Intergroup anxiety (see Appendix B.10). This was measured using Stephan and Stephan's (1985) intergroup anxiety scale (original Cronbach's $\alpha = .86$). This measure asks participants to indicate the extent to which they would feel a variety of emotions when being the only White person interacting with a group of Black people. This is a 10-item scale ranging from -3 (not at all) to +3 (extremely) with 3 items reversed scored. Higher scores on this scale indicated higher intergroup anxiety. A sample item from this scale is "I would feel awkward."

Outgroup avoidance (see Appendix B.11). This was gauged using a single item measure on a 0 (not at all) to 10 (very much) scale, "To what extent do you avoid interacting with Black people?" Higher scores indicated more avoidance.

Procedure

Participants read and signed informed consent statements (see Appendix B.2) and completed paper and pencil surveys containing the materials outlined above in groups ranging from 1-10 people. Participants received a debriefing form (see Appendix B.13) upon completion of the survey and subsequently received proof of participation and monetary payment (where applicable).

Results

Preliminary Analyses and Descriptive Statistics

Preliminary analyses were conducted to investigate missing data, normality, and outliers. Missing data were analyzed by examining variable frequencies. There were found to be 10 values missing from the dichotomous acknowledgement of prejudice measure, 1 value missing from the continuous acknowledgment of personal bias measure (and hence 1 value missing from each projection index), 1 value missing from prejudice justification based on the beliefs of Whites, and 1 value missing from prejudice justification based on the beliefs of Blacks. This small amount of missing data was not deemed problematic. For variables on multi-item scales, the mean function was used to calculate final variable scores. Thus, individual items used to calculate each of these variables were investigated for missing data as well. There was found to be 1 value missing from each MRS item (all from 1 participant, hence one missing value on the MRS total score variable), 1 additional value missing from MRS item 7, 1 value each missing from general prejudice justification items 3, 4, and 6, 1 value each missing from SDO items 10 and 16, and one value missing from RWA item 12. It was determined that there were not enough data missing from these individual scale items to warrant action, and that scores could be accurately obtained by calculating the mean of the items that were present. There were also no data missing from any of the demographic variables (age, sex, ethnicity). Therefore, it was not necessary to take any additional action regarding missing data.

To investigate normality, skewness and kurtosis values were examined for each continuous variable. Based on the criterion that skewness coefficients of $> |2|$ indicate

distributions deviating from normality, distributions for all of the variables can be considered normal with the exception of one variable: outgroup avoidance exhibited skewness deviating from normality. Further examination revealed that this was likely due to a large number of participants (61.7%) responding with a “0”, indicating that they did not avoid the outgroup at all. The kurtosis values obtained for all variables did not deviate from normality, according to the criterion that kurtosis values $< |2|$ are acceptable, again with the exception of outgroup avoidance (meta-stereotype of self as individual also had a kurtosis value slightly above 2). These normality violations were not problematic enough to warrant action, but the reader should be aware of them nonetheless.

To examine potential outliers in each of the continuous variables of interest, scores on each variable were converted to z-scores. Based on the criterion that z-scores $> |3|$ are probable outliers, examination of z-score frequencies revealed outliers on several variables. There were found to be 3 outliers on the continuous acknowledgment of personal bias measure, 4 outliers on the outgroup avoidance measure, 1 outlier on the meta-stereotype of self as individual measure, 1 outlier on the SDO measure, and 1 on the RWA measure. Further examination revealed that in only one case did multiple outliers pertain to one participant. It was found that one participant had outliers on both the continuous acknowledgment of bias measure and outgroup avoidance. After performing several key analyses with and without this participant, no differences were found, and it was determined that this participant need not be excluded from further analyses. The outliers that were detected were not due to data entry errors; they were merely cases of high or low scoring individuals. Thus, no action was taken regarding these outliers. With regard to tested regression models, there were 2 outliers in the solution identified based

on the criterion that standardized residuals greater than $|3|$ are probable outliers. However, no differences were obtained when key analyses were conducted with and without these outliers. Thus, they were not influential enough to warrant removal.

Descriptive statistics for all relevant continuous variables are presented in Table

1. For the most part, these results were as expected.

No sex differences were observed on key projection and meta-stereotype variables.⁹ Thus, further sex differences were not examined.

Projection

Evidence in support of the first hypothesis was obtained. That is, Whites projected their prejudice onto fellow Whites. Those acknowledging personal prejudice on the dichotomous measure ($n = 17$) reported a significantly higher percentage of prejudiced Whites ($M = 70.00$, $SD = 11.04$) than those who did not acknowledge personal prejudice ($n = 106$) ($M = 46.93$, $SD = 20.53$), $t(37.03) = -6.90$, $p < .001$.¹⁰ The rating of White prejudice was significantly different from the midpoint of the scale (50) for those acknowledging personal prejudice, ($t(16) = 7.47$, $p < .001$), but not among those who did not acknowledge personal prejudice ($t(105) = -1.62$, $p = .107$). Superior evidence of projection was found in the two-tailed correlation between the continuous bias acknowledgement measure and perceived percentage of Whites holding prejudices, ($r(131) = .34$, $p < .001$). This correlation indicates that greater acknowledgement of personal bias was associated with higher ingroup prejudice ratings, an effect of moderate magnitude.

⁹ One exception was the meta-stereotype of ingroup measure, which was rated significantly more negatively by women ($p < .003$). However, for both men and women this variable was higher than the midpoint of the scale, indicating that both sexes held a negative meta-stereotype.

¹⁰ Equal variances not assumed based on Levene's test. Throughout the thesis, all t-tests reported are two-tailed.

*Table 1.**Descriptive Statistics for Key Continuous Variables (Study 1)*

Variable (Possible range)	<i>Mean</i>	<i>SD</i>	<i>Skew</i>	<i>Kurt</i>
Prejudice (continuous acknowledgment of personal bias measure) (0-10)	1.73	1.70	.95	.65
Ingroup anti-outgroup prejudice, percent (0-100)	49.17	21.04	-.17	-.89
Outgroup anti-outgroup prejudice, percent (0-100)	50.79	22.54	-.17	-.57
Ingroup Projection Index (0-10)*	3.29	2.02	.42	-.57
Outgroup Projection Index (0-10)*	3.52	2.02	.31	-.10
Meta-stereotype of ingroup (0-10)	6.41	2.08	-.23	-.27
Meta-stereotype of self as individual (0-10)	1.42	1.86	1.53	2.06
Prejudice ('actual prejudice', MRS) (0-4)	.86	.61	.54	-.66
Identification with ingroup (Whites) (1-7)	3.92	1.49	-.23	-.49
Social dominance orientation (1-7)	2.35	1.02	.93	.52
Right wing authoritarianism (1-7)	2.85	.95	.72	1.00
Justification of prejudice based on Whites' beliefs (1-9)	3.77	2.19	.44	-.88
Justification of prejudice based on Blacks' beliefs (1-9)	3.94	2.17	.30	-.88
Justification of general prejudice (1-7)	2.60	.95	.14	-.13
Outgroup avoidance (0-10)	.83	1.38	2.02	4.30
Intergroup anxiety (-3 to +3)	-1.03	1.12	.40	-.64

Note. * lower scores on projection measures indicate stronger projection.

A *t*-test revealed that there was also evidence present in support of outgroup projection: Whites acknowledging prejudice in themselves on the dichotomous yes/no question reported a significantly higher percentage of prejudiced Blacks ($M = 69.71$, $SD = 23.28$) than those who did not acknowledge prejudice in themselves ($M = 48.15$, $SD = 21.41$), $t(121) = -3.78$, $p < .001$, demonstrating outgroup projection of intergroup attitudes. The rating of Black prejudice was significantly greater than the midpoint of the scale (50) for those acknowledging prejudice in themselves ($t(16) = 3.49$, $p = .003$), and not significantly different for those who did not acknowledge prejudice ($t(105) = -.89$, $p = .374$). Further evidence was the two-tailed correlation between the continuous bias acknowledgement measure and perceived percentage of Blacks holding prejudices, $r(131) = .33$, $p < .001$, indicating that higher acknowledgement of personal bias was associated with higher ratings of perceived outgroup prejudice. Thus, ingroup and outgroup projection of intergroup attitudes was demonstrated.

Meta-stereotypes

There was found to be a shared meta-stereotype among Whites that Whites are viewed by Blacks as prejudiced. This was found by examining the mean rating of the perceived extent to which Blacks believed Whites were prejudiced ($M = 6.41$, see Table 1) which was significantly greater than the midpoint (5) of the scale, $t(132) = 7.78$, $p < .001$. These results signify evidence for a meta-stereotype at the group level.

The mean rating of the perceived extent to which Blacks believed the participant personally was prejudiced ($M = 1.42$, see Table 1) was significantly lower than the midpoint of the scale (5), $t(132) = -22.08$, $p < .001$. This mean rating was also significantly lower than mean ratings of the extent to which Blacks were perceived to

view Whites as prejudiced, $t(132) = -24.71, p < .001$. As expected, there was a significant two-tailed correlation between participant's ratings of the extent to which Blacks view Whites as prejudiced and the extent to which Blacks view participants personally as prejudiced, $r(132) = .30, p < .001$. Thus, although participants did not expect to be personally viewed very negatively on average, they did expect to be viewed more negatively to the extent that their meta-stereotype of the ingroup was more negative.

Relation between the Projection of Intergroup Attitudes and Prejudiced Meta-stereotypes.

In order to investigate the hypothesis that prejudiced meta-stereotypes of ingroup were formed via ingroup and outgroup projection of intergroup attitudes, several analyses were conducted. First, correlations were investigated (see Table 2). As reported in the projection results, there was a significant positive correlation between self-rated prejudice (continuous bias acknowledgement) and White prejudice ratings ($r = .34$), indicating ingroup projection of intergroup attitudes. There was also a positive correlation between White prejudice ratings and meta-stereotype rating ($r = .49$) illustrating evidence of outgroup projection at the level of specific category (e.g., "I think most Whites are high in prejudice, Blacks think Whites are high in prejudice as well"). These correlations indicated preliminary support for the top part of the hypothesized model (Figure 1.) There was a positive correlation between self-rated prejudice and Black prejudice ratings ($r = .33$) as well, illustrating outgroup projection (at the level of intergroup target category). Also, there was a positive correlation between Black prejudice ratings and the meta-stereotype ($r = .55$), again indicating outgroup projection at the level of intergroup target category (e.g., "I think most Blacks are high in prejudice, therefore Blacks must

Table 2.

Correlations Depicting the Relation between Projection and Meta-stereotypes (Study 1)

	(1)	(2)	(3)	(4)
(1) Self-rated prejudice (continuous acknowledgement of bias)	--	.34***	.33***	.33***
(2) White prejudice (percent)		--	.60***	.49***
(3) Black prejudice (percent)			--	.55***
(4) Meta-stereotype of ingroup				--

Note. *** $p < .001$. Pairwise deletion of missing cases used, $N = 132$ -133 for each correlation presented here. Correlations are two-tailed.

think Whites are high in prejudice), and support for the bottom part of Figure 1.

The model was formally tested in a path model using AMOS 16.0 software. Bootstrapping procedures were used to obtain the significance levels for standardized estimates. Acceptable fit criteria include: non-significant chi-squared values, root-mean-square-error of approximation (RMSEA) values below .06, comparative fit index (CFI) values above .95, (Hu & Bentler, 1999), and standardized root-mean-squared residual (SRMR) values less than .05 (Byrne, 2001). One missing value from the continuous bias acknowledgement measure was replaced with the mean for this analysis only. The model in Figure 2 demonstrated reasonable fit on most indices, $\chi^2(1) = 2.79, p = .095$, RMSEA = .116, CFI = .986, and SRMR = .034. Although the RMSEA value fell outside of the recommended boundary, the model is considered to demonstrate reasonable fit to the data as .10 is considered mediocre fit (Byrne, 2001), and most other fit criteria were within the ideal range. Further, although the zero-order correlation between self-rated prejudice and ingroup meta-stereotype was significant ($r = .33$), when this direct path was included in the hypothesized model it was not significant ($\beta = .13, p = .106$). This suggests full mediation, according to established criteria (Baron & Kenny, 1986). Thus, results were consistent with expectations that self-ratings of prejudice impact meta-stereotypes about ingroup prejudice as a function of both ingroup and outgroup projection.

To rule out the possibility that introjection (i.e., self-group congruency perceptions operating in the direction of group to self, see Krueger, 2002), rather than projection, contributes to the formation of meta-stereotypes, an alternative model was tested. It tested whether perceived ingroup and outgroup prejudice ratings predicted the ingroup meta-stereotype through self-prejudice ratings, reversing the positions of self and

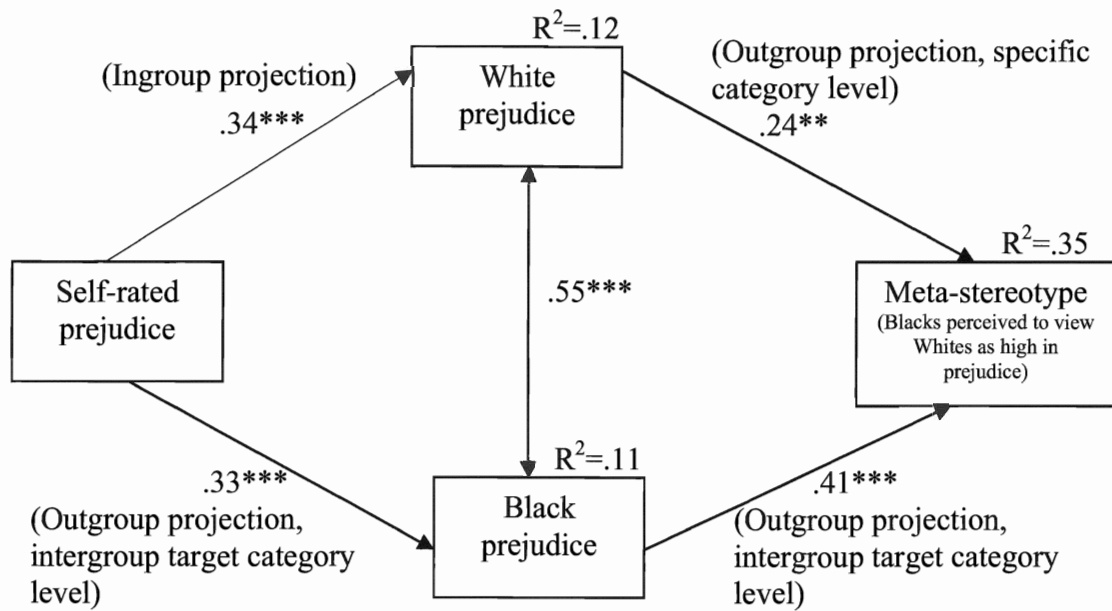


Figure 2. $N = 133$. Results of path model testing the hypothesized relation between meta-stereotypes of ingroup and the projection of intergroup attitudes (Study 1). $** p < .05$, $*** p < .01$. Path coefficients are standardized.

group prejudice in Figure 2. This alternative model demonstrated poor model fit, $\chi^2(2) = 43.81$, $p < .001$, RMSEA = .398, CFI = .683, and SRMR = .184. Therefore, in terms of explaining meta-stereotypes, self-to-group ‘projection’ provides a better fit to the data than does group-to-self ‘introjection.’

Correlates of Projection and Meta-stereotypes

Ingroup projection of intergroup attitudes, meta-stereotype of ingroup and meta-stereotype of self as individual were each examined in terms of their relations with the correlates described above. Below, significant correlations only are reported for brevity.¹¹ All two-tailed correlations can be found in Table 3.

Prejudice (MRS $\alpha = .77$). Correlations involving prejudice partially supported the hypotheses. Higher prejudice against Blacks was associated with more projection of intergroup attitudes onto fellow Whites. Also, the higher Whites were in prejudice (continuous bias acknowledgement measure only) the more negative (i.e., viewed to be higher in prejudice) were their meta-stereotypes (both types).

Ingroup identification ($\alpha = .79$).¹² As predicted, the more Whites identified with their ingroup, the more negative their meta-stereotypes (both types).

Social dominance orientation ($\alpha = .91$). As predicted, higher SDO scores predicted greater projection of intergroup attitudes onto fellow Whites. Also, as predicted, the higher Whites were in SDO the more prejudiced they expected to be personally viewed by Blacks.

Prejudice justification. In line with predictions, the more negative participants’ meta-stereotypes (both types), the greater the extent to which participants explicitly

¹¹ For example, there were no significant correlations obtained with RWA.

¹² Item 3 from the Identification scale was dropped to increase reliability due to the item’s low item-total correlation.

Table 3.

Projection and Meta-stereotype Correlates (Study 1)

	Ingroup Projection Index	Outgroup Projection Index	Meta- stereotype of ingroup	Meta- stereotype of self as individual
Prejudice ('actual prejudice', MRS)	-.24**	.01	.02	.17*
Prejudice (continuous acknowledgment of personal bias measure)	na+	na+	.33**	.45**
Identification with ingroup (Whites)	-.05	.10	.23**	.21*
Social dominance orientation	-.25**	-.11	.01	.22*
Right wing authoritarianism	-.15	.01	.02	.10
Justification of prejudice based on Whites' beliefs	-.02	.04	.20*	.30**
Justification of prejudice based on Blacks' beliefs	-.05	.01	.24**	.41**
Justification of general prejudice	-.12	-.08	.09	.22*
Outgroup avoidance	-.21*	-.12	.23**	.36**
Intergroup anxiety	-.21*	-.02	.18*	.39**

Note. * $p < .05$; ** $p < .01$. Pairwise deletion of missing cases used, $N = 131$ -133. Note that on the projection index scores closer to 0 indicate stronger projection, therefore negative correlations here actually signify relations where projection is greater. Correlations are two-tailed.

+correlations between projection indices and continuous acknowledgement of bias measure are uninterpretable as this measure was involved in the calculation of projection indices.

justified their prejudice based on the beliefs of Blacks. Also, the more negative participants' meta-stereotypes (both types), the greater the extent to which participants explicitly justified their prejudice based on the beliefs of Whites, though this was of slightly smaller magnitude than the relation with justification of prejudice based on the beliefs of Blacks. The general Prejudice Justification scale (Esses & Hodson, 2006) ($\alpha = .81$) was correlated with meta-stereotype of self as individual only, indicating that the more negative one's meta-stereotype of self as individual, the more one believes prejudice generally is justified.

Intergroup anxiety ($\alpha = .89$). As expected, higher scores on intergroup anxiety among Whites were related to stronger projection to the ingroup. Also, as predicted, heightened intergroup anxiety was associated with more negative meta-stereotypes (both types).

Outgroup avoidance. As predicted, the greater the extent to which Whites reported avoiding contact with Blacks, the more they projected their intergroup attitudes onto Whites. It was also found, as expected, that those holding more negative meta-stereotypes (both types) avoided Blacks to a greater extent.

Exploratory Mediation Analyses

As mentioned above, Vorauer et al. (1998) suggested that the relation between meta-stereotypes and outgroup avoidance may be mediated by intergroup anxiety. Study 1 allowed for the investigation of this suggestion using 'prejudiced' meta-stereotypes (i.e., those referring to the extent to which Whites believe they are viewed by Blacks to be prejudiced). Mediation was operationalized according to Baron and Kenny's (1986) criteria. That is, it was necessary for significant relations to exist between the

independent and dependent variable, the independent variable and the mediator, the mediator and the dependent variable controlling for the independent variable's effect on the criterion, and for the relation between the independent and dependent variable to be reduced in the presence of the mediator. The results of several regression analyses provided evidence consistent with Vorauer et al.'s (1998) prediction (see Figures 3a & 3b). The relation between meta-stereotypes and outgroup avoidance was partially mediated by intergroup anxiety. Therefore, meta-stereotypes appear to discourage contact through heightened anxiety, suggesting that negative meta-stereotypes are impediments to positive intergroup relations.

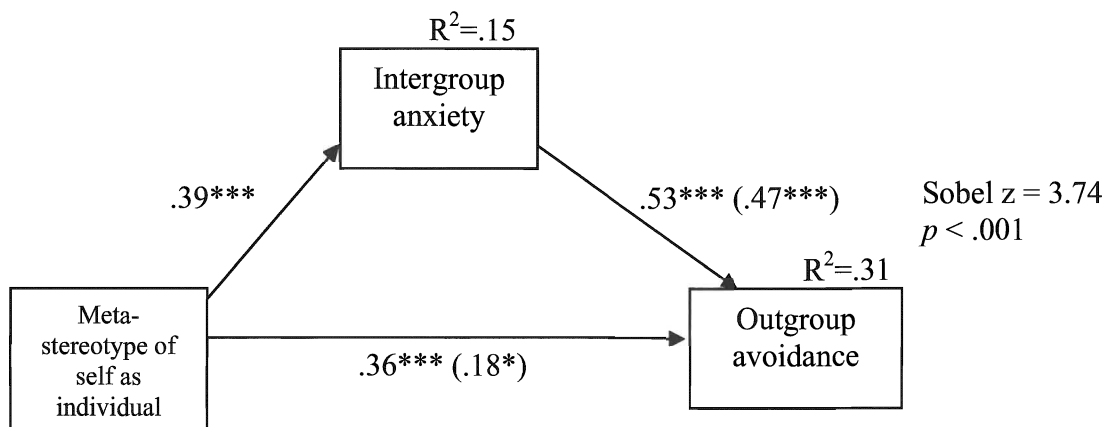


Figure 3a. Tests of direct and indirect effects of negativity of meta-stereotype of self as individual on outgroup avoidance via intergroup anxiety (Study 1). Standardized coefficients shown, with parenthetical values representing relations after controlling for other predictor. * $p < .05$; ** $p < .01$; *** $p < .001$.

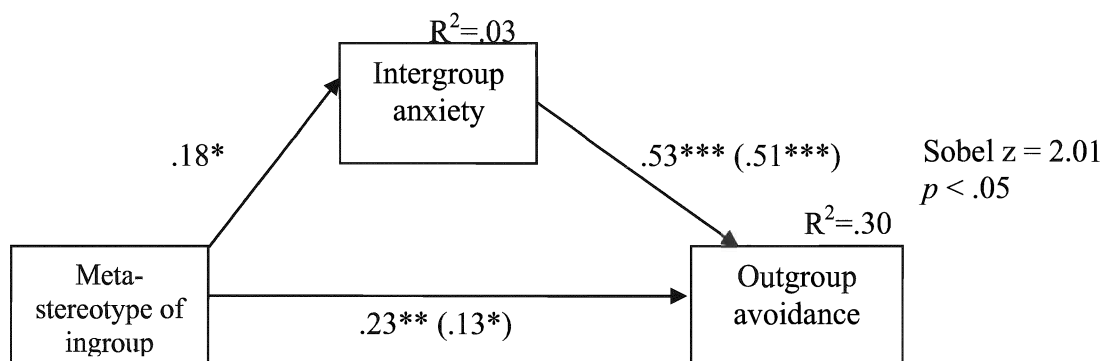


Figure 3b. Tests of direct and indirect effects of negativity of meta-stereotype of ingroup on avoidance of outgroup via intergroup anxiety (Study 1). Standardized coefficients shown, with parenthetical values representing relations after controlling for other predictor. * $p < .05$; ** $p < .01$; *** $p < .001$.

Discussion

Study 1 provided evidence that Whites project their intergroup attitudes onto fellow Whites, seeing more (less) prejudice in ingroup members to the extent that they acknowledged (did not acknowledge) personal biases. This finding established that, like basic attitudes (see Mullen et al., 1985) and specific prejudicial beliefs (Krueger, 1996; Strube & Rahimi, 2006), general intergroup attitudes can be projected as well. Study 1 also provided evidence of outgroup projection of intergroup attitudes, at a magnitude that was roughly equivalent to that of the ingroup projection. This both corresponded (Hodson et al., 2000; Judd et al., 2005) and conflicted (e.g., Clement & Krueger, 2002; Robbins & Krueger, 2005) with previous research, illustrating that intergroup attitudes may be projected to both the ingroup and the outgroup with the same strength. Study 1 also provided evidence that prejudiced meta-stereotypes of ingroup are formed via ingroup and outgroup projection of intergroup attitudes, illustrating that these two types of intergroup perceptions are related in a meaningful way.

Ingroup projection of prejudice was correlated with prejudice and several correlates of prejudice (SDO, intergroup anxiety, and outgroup avoidance), suggesting that the more prejudiced one is, the more likely one is to project these intergroup attitudes onto ingroup members. Despite the absence of the expected correlation between ingroup projection of intergroup attitudes and explicit prejudice justification measures (see Table 3), other correlates seem to imply that projection serves as a means to justify prejudice. Results indicated that those who were more apt to be prejudiced projected intergroup attitudes onto their ingroup more strongly. This implies that these individuals had more to justify, given that they held socially-sensitive attitudes, and thus projected strongly. It is

unclear why the correlation between projection and justification was absent, but Study 2 examined this further. More importantly, these findings imply that the projection of intergroup attitudes may be motivated. The results suggested that people, especially those acknowledging negative attitudes, seek confirmation of their intergroup attitudes in the ingroup, possibly to reduce feelings of threat or anxiety about the attitude. Clearly though, this should occur more strongly for those experiencing more threat (i.e., those holding more negative outgroup attitudes), which these results illustrate. It is important to note that contrary to expectations, prejudice and its correlates were not related significantly to outgroup projection. It may be then, that only ingroup projection of intergroup attitudes eases the threat experienced by those holding negative attitudes. This study, having provided evidence that Whites project prejudice and suggesting that ingroup projection of prejudice may be motivated by threat, opened the door for Study 2 to investigate further when ingroup projection occurs most strongly in intergroup settings.

Study 1 also established that Whites hold a shared negative ingroup meta-stereotype that their group is viewed by Blacks to be prejudiced. This replicates the previous finding that Whites hold the meta-stereotype that they are viewed to be prejudiced by Aboriginals (Vorauer et al., 1998), extending this finding to perceived beliefs of a different outgroup, Blacks.¹³ It was found also that the more negative the meta-stereotype of ingroup, the more negative the meta-stereotype of self as individual. Despite this association, the meta-stereotype of ingroup was significantly more negative than the meta-stereotype of self as individual. Perhaps then, group membership must be salient in order for Whites' meta-stereotypes of self and meta-stereotypes of ingroup to

¹³ Judd et al. (2005) conducted a similar examination involving Blacks; however, they did not investigate the meta-stereotype "prejudiced" per se.

be more similar (Méndez et al, 2007); Study 2 investigated this potential. This could also be due to a ‘better than average effect’ (Alicke & Govorun, 2005), a well-established finding that individuals rate the self more positively than average group members. Indeed, people rate their group overall as more prejudiced than the self (Saucier, 2002). Thus one might consider one’s group overall to be *perceived* as more prejudiced than the self, especially when one’s personal group membership is not salient.

Meta-stereotype of ingroup was found to be correlated positively with prejudice, correlates of prejudice (intergroup anxiety, outgroup avoidance), and ingroup identification. This is intuitive, and supports the posited hypothesis, but does not support Vorauer et al.’s (1998) finding that those lower in prejudice (and presumably ingroup identification, according to Vorauer et al. (1998)) held more negative ingroup meta-stereotypes. Perhaps this finding was unique to Vorauer et al.’s (1998) research. It may also be that several differences between Study 1 and Vorauer et al.’s (1998) account for the discrepant findings, such as the use of a different outgroup (Blacks), different meta-stereotype measurement, different prejudice measures, and different calculation of the correlation between prejudice level and meta-stereotype negativity (see Vorauer et al., 1998). As mentioned previously however, it is speculated that this discrepancy is likely due to the fact that Study 1 focused upon a meta-stereotype referring to a single attribute (prejudice) as opposed to several. Also as predicted, meta-stereotype of the ingroup was correlated with prejudice justification based on the beliefs of Blacks, suggesting that Whites use meta-stereotypes as a means to justify their own prejudice. All of the correlates of meta-stereotype of ingroup were also correlated with the meta-stereotype of

self as individual, as were social dominance orientation and general prejudice justification.

Additionally, the relations between both types of meta-stereotypes and outgroup avoidance were partially mediated by intergroup anxiety, providing evidence for Vorauer et al.'s (1998) assertion. It is important to note however, that these data are correlational, thus, this finding illustrates a hypothesized relationship. This finding, along with the correlates of meta-stereotypes discussed above, illustrates that meta-stereotypes hold very negative implications for intergroup relations. Study 1 established that Whites generally believe they are viewed negatively by Blacks in terms of prejudice; those who are higher in prejudice hold even more negative meta-stereotypes; and meta-stereotypes are associated with prejudice justification, intergroup anxiety, and avoidance of intergroup contact. These results not only suggest that meta-stereotypes lead to prejudice perpetuation alone, but also lead to negative or avoided intergroup contact, which is very detrimental to positive intergroup relations and, in turn, can lead to additional perpetuation of prejudice. Study 2 further explored meta-stereotypes, specifically their impact on intergroup contact.

Study 1 also provided insight into the relation between projection and meta-stereotypes. Clearly, these are related constructs, but the current study is the first to demonstrate that prejudiced meta-stereotypes are at least partly formed through the projection of intergroup attitudes. Personal intergroup attitudes influence perceptions of White and Black prejudice (ingroup and outgroup projection, respectively), which are then projected onto the outgroup, resulting in a prejudiced meta-stereotype rating. Thus, meta-stereotypes are not simply formed out of an awareness of the stereotypes ascribed to

one's ingroup by the outgroup (Frey & Tropp, 2006; Klien & Azzi, 2001), but are also heavily influenced by one's own perceptions of one's own and others' intergroup attitudes. Meta-stereotypes may be a product of one's own intergroup attitudes, a previously unconsidered possibility. Thus, not only are meta-stereotypes detrimental to ingroup relations, but the projection of intergroup attitudes is as well, through its influence on meta-stereotype formation (in addition to the other problems projection can lead to, such as attitude rationalization). This highlights the need for research into the specific intergroup damage created by meta-stereotypes and methods to reduce such damage.

In conclusion, Study 1 was a useful preliminary investigation of social projection and meta-stereotypes in the context of intergroup attitudes. Study 1 established that Whites project their intergroup attitudes onto their ingroup (and outgroup); that Whites overall hold a meta-stereotype of how Whites are viewed by Blacks in terms of prejudice; and that these meta-stereotypes are formed through the projection of intergroup attitudes. Several correlates of social projection and meta-stereotypes in this context were also identified in Study 1. These results led to the development of Study 2, which further investigated these intergroup processes employing an experimental design.

Study 2

Study 2 was designed to further investigate the social projection of intergroup attitudes and the meta-stereotype that one or one's group holds negative intergroup attitudes. Study 1 established that the projection of intergroup attitudes exists, that the meta-stereotype that one (or one's group) is viewed to be prejudiced (by Blacks) was held by Whites, and that the projection of intergroup attitudes may play a role in the formation of these meta-stereotypes. Given that prejudiced meta-stereotypes are damaging to ingroup relations, it was deemed necessary to further understand the processes leading to meta-stereotypes (i.e., projection), and the damage these overlapping perceptions can cause. Thus, in addition to replicating the key findings of Study 1, the major objectives of Study 2 were to determine (a) when projection occurs most strongly in this context and (b) the extent to which these meta-stereotypes are damaging to intergroup contact. Specifics of the issues examined by Study 2 are detailed below.

An unresolved question is whether the projection of intergroup attitudes is a motivated or perceptual process. Study 2, an experimental design, allowed for the investigation of the conditions under which this type of projection occurs most strongly. The primary interest of this study was to determine when ingroup projection of intergroup attitudes is strongest. A secondary issue for investigation was the direction of projection effects (i.e., from group-to-self versus self-to-group). There seems to be strong evidence supporting the projection hypothesis (i.e., perceptions of self extended to the [in] group, e.g., see Krueger et al., 2006), but it is possible that the underlying phenomenon could be introjection (i.e., perceptions of group extended to the self). Study 2 was designed to experimentally address this question by exposing participants to

attitude feedback allegedly about the self or group and then examining perceptions of these targets.

An additional issue examined by Study 2 concerns meta-stereotypes. Given that holding the meta-stereotype that others view one (or one's group) is prejudiced is damaging to intergroup relations, it is important to determine how detrimental these perceptions are in intergroup situations, especially compared to other-stereotypes. To examine this, Study 2 manipulated meta-stereotypes (the first study to do so) and other-stereotypes (in addition to self-stereotypes), and led participants to believe that they would engage in an intergroup interaction, with the opportunity to avoid or approach the intergroup contact.

In order to address the new issues outlined above, Study 2 differed from Study 1 in several notable ways. Study 2 examined the processes investigated in Study 1 in an anticipated intergroup contact context, allowing for a more engaging intergroup situation. Moreover, Study 2 was experimental, allowing for tests of causal relations, such as whether threatening feedback causes people to project their intergroup attitudes. In addition, Study 2 examined a different type of intergroup attitude than Study 1. Whereas Study 1 focused on anti-outgroup prejudice, Study 2 focused on 'ingroup favouritism.' Thus, Study 2 examined the *projection of ingroup favouritism*, and the *meta-stereotype that one favours the ingroup*. Ingroup favouritism involves the preferential treatment of one's own group over others, and is a well documented and commonly acknowledged type of prejudice (for reviews, see Brewer & Brown, 1998; Messick & Mackie, 1989). This substitution was made given that ingroup favouritism represents the most common form of intergroup bias (see Brewer, 1999), and was presumed more likely to be

expressed by participants in a lab setting than anti-outgroup prejudice.

Thus, the primary aims of Study 2 involved: (a) replicating the projection and meta-stereotype findings of Study 1 with a different form of prejudice, “ingroup favouritism”, (b) investigating the circumstances (in terms of motivation and direction) where people are more likely to project intergroup attitudes, and (c) examining which type(s) of perceptions (meta- versus other-stereotypes) have the most negative impact on anticipated intergroup contact.

Replication Hypotheses

Prior to examining issues new to Study 2, pre-manipulation data (collapsed across conditions) were examined to determine whether Study 1 results were replicated. The second study moved away from examining anti-Black prejudice perceptions by considering “ingroup favouritism” (i.e., pro-White biases), an intergroup bias that is more common and more pernicious (Gaertner et al., 1996). Thus, it was important to replicate the projection and meta-stereotype findings when “ingroup favouritism” was examined.

H1: Key results of Study 1 would be replicated in Study 2, specifically:

H1a: Participants would demonstrate ingroup projection (and outgroup projection) of intergroup attitudes.

H1b: Participants would hold a shared meta-stereotype that Whites are viewed by Blacks to favour their ingroup (i.e., Whites). Also, potential differences between the different types of meta-stereotypes (meta-stereotype of ingroup, meta-stereotype of self as ingroup member, and meta-stereotype of self as individual) were expected to replicate Study 1 findings where possible, and were investigated for exploratory purposes otherwise.

H1c: Ingroup favouritism meta-stereotypes of ingroup would be rooted in the projection of ingroup favouritism. It was also examined whether ingroup favouritism meta-stereotypes of self as ingroup member were formed through the projection of ingroup favouritism.

Experimental Hypotheses Overview

In addition to replicating the key findings of Study 1, Study 2 was designed to address several new, interesting hypotheses. Most importantly, the manipulations in the Study 2 were designed to investigate whether people project intergroup attitudes to their ingroup more under conditions of threat, and whether manipulated Meta- or Other-Stereotypes are most threatening in intergroup situations, hence producing the most negative implications for intergroup contact. Study 2 participants were expected to experience (at least one of) two key types of threat, depending on their condition; one type leading to strong projection of intergroup attitudes, and one type leading to negative intergroup contact expectations. *Self-concept threat* was expected to govern projection processes. I predicted that when participants felt personally threatened they would seek support or ‘back up’ in their attitudes from their ingroup. On the other hand, outcomes regarding intergroup contact expectations were expected to be governed by *intergroup contact threat* (i.e., concerns about how smooth or awkward the intergroup interaction would be). It was expected that when participants were most concerned or anxious about the intergroup interaction, they would have the most negative interaction expectations. Table 4 depicts the type(s) of threat presumably experienced by participants in each condition. Further detail on these hypotheses follows the overview of the experimental manipulations.

Table 4.

Experimental Conditions (Study 2)

	Self-stereotypes	Other-stereotypes	Meta-stereotypes
Personal	(1) Personal Self-Stereotype <i>("It has been determined that you strongly favour Whites over Blacks")</i>	(3) Personal Other-Stereotype <i>("It has been determined that your partner strongly favours Blacks over Whites")</i>	(5) Personal Meta-Stereotype <i>("Your partner has determined you to be someone who strongly favours Whites over Blacks")</i>
Group	(2) Group Self-Stereotype <i>("It has been determined that White Brock students strongly favour Whites over Blacks")</i>	(4) Group Other-Stereotype <i>("It has been determined that Black Brock students strongly favour Blacks over Whites")</i>	(6) Group Meta-Stereotype <i>("Your Partner has determined White Brock students to be people who strongly favour Whites over Blacks")</i>

Note. Manipulation feedback information presented to White participants is shown parentheses. Cells with double lined borders denote conditions expected to be threatening to the self concept (conditions 1 and 5). Cells with shaded backgrounds denote conditions expected to be threatening to intergroup contact (conditions 3, 4, 5, and 6).

Overview of Experimental Manipulations

It is necessary to outline the experimental manipulations prior to a detailed discussion of the experimental hypotheses, given the complexity of the study. This will aid in the reader's understanding of the hypotheses. As mentioned above, a key addition to Study 2 was the anticipated intergroup interaction context. White participants were led to believe that they would be interacting with a Black person after first responding to some computer based questionnaires. The interaction however, did not actually occur, a commonly used methodology (e.g., Britt et al., 1996, Study 4; Goff, Steele, & Davies, 2008; Johnson, Olsen, & Fazio, 2009, Study 2; Plant & Devine, 2003, Study 2; Vorauer et al., 1998, Study 2). After first completing pre-manipulation measures (details follow), participants were randomly assigned to one of six conditions. The conditions were based on three types of stereotypes: self-stereotypes (personal and group), other-stereotypes (personal and group), and meta-stereotypes (personal and group; see Table 4). These conditions were designed to test the hypotheses that projection would occur most strongly under conditions of self-concept threat, that projection would occur in the direction of self-to-group, and that intergroup contact threat would lead to negative intergroup contact expectations. A brief description of these conditions is below, with more detail to follow. The final sample of the study included only White participants.

Personal Self-Stereotype Condition

Each participant in this condition was given information that s/he personally strongly favours Whites over Blacks. This information came from tests completed by the participant and allegedly scored by the computer. Thus, the participant was essentially informed that *s/he personally is prejudiced*.

Group Self-Stereotype Condition

Each participant in this condition was informed that White Brock students (who had completed the study *up to that point*) strongly favour Whites over Blacks. This information came from the computer's alleged tabulation of data collected from previous White participants and excluded the participant. Thus, participants were informed that *White Brock students are prejudiced*.

Personal Other-Stereotype Condition

Each participant in this condition was informed that her/his Black interaction partner strongly favours Blacks over Whites. This information came from tests completed and information provided by the specific partner. Thus, participants were informed that *the Black partner is prejudiced*.

Group Other-Stereotype Condition

Each participant in this condition was informed that Black Brock students (who completed the study *up to that point*) strongly favour Blacks over Whites. This information apparently came from the computer's fictitious tabulation of data collected from Black participants earlier in the study. Thus, participants were essentially informed that *Black Brock students on average are prejudiced*.

Personal Meta-Stereotype (i.e., Meta-Stereotype of Self) Condition

Each participant in this condition was informed that the Black interaction partner thinks that the participant personally favours Whites over Blacks. This information apparently came from the partner's reaction to information provided by the participant. Thus, participants were informed that *the Black partner views the participant personally to be prejudiced*.

Group Meta-Stereotype (i.e., Meta-Stereotype of Ingroup) Condition

Each participant in this condition was informed that the Black interaction partner thinks that White Brock students on average favour Whites over Blacks on the previous measures. This information apparently came from information provided by the partner. Thus, participants were informed that their *Black partner believes that White Brock students on average are prejudiced*.

Experimental Hypotheses

Projection

Study 1 established that Whites project their intergroup attitudes (i.e., being prejudiced or not) onto other Whites. Study 2 attempted to investigate the circumstances under which Whites are more (or less) likely to project related attitudes (i.e., favouring one's ingroup or not) in order to investigate the possibility of motivated projection. In addition, the experimental conditions of Study 2 were designed to test the direction of self-group congruency ratings (self-to-group *versus* group-to-self). As discussed above, there is some debate regarding these issues. Divergent theoretical perspectives would predict different outcomes regarding projection in this context. Because of the various unresolved issues in the projection literature, and lack of experimental research on the issues investigated, five possible models explaining motivation behind and direction of the ingroup projection of intergroup attitudes were examined. Projection motivation and projection direction are intertwined issues. That is, people may project from self to group for one reason, and introject from group to self for another. Thus, it was predicted that the theoretical model standing out as supported would provide information on both

projection motivation and direction in this context. Using the experimental manipulations mentioned, the following models were examined (see Table 5).

Model A: Self-as-sample model. This model is based on the premise that the self is the best source of information one has to make inferences about others (Krueger et al., 2006). That is, people naturally *look to the self* as an available and accurate source of information, and subsequently project outward to others. If true, external manipulations (information about either the self or others that does not originate from the self) should not exert much impact on this rather simple self-focused self-to-group bias, with the participant relying on what s/he personally perceives to be true of the self. This model predicts that projection is context independent and will occur equally across all conditions.

Model B: Perceptual cognitive overgeneralization model. This model holds that projection is a passive cognitive overgeneralization, whereby people use the information they have about the self to make inferences about others (e.g., Dawes, 1989, 1990; Hoch, 1987; Krueger & Zeiger, 1993). If true, external information about the self could also be used as a basis for projection to the group. This model predicts that the strongest projection should occur in the Personal Self-Stereotype condition (where the participant receives information that s/he personally favours Whites over Blacks). If the self is the best source of information regarding the average ingroup member, this information received about the self would be employed to make predictions about one's group. This Model differs from the *Self as Sample* model (Model A) in that projection is affected by manipulations here, especially information about the self.

Table 5.

Potential Models Regarding Projection Outcomes (Study 2)

Model	Experimental Condition					
	Self-stereotype		Other-stereotype		Meta-stereotype	
	Personal	Group	Personal	Group	Personal	Group
<i>A. Self-as-sample</i>	1	1	1	1	1	1
<i>B. Perceptual cognitive overgeneralization</i>	3	1	1	1	2	1
<i>C. Motivated threat</i>	5	1	1	1	4	1
<i>D. Introjection (Informational influence)</i>	1	3	1	1	1	2
<i>E. Normative influence</i>	3	3	1	1	2	2

Note. Numbers within table refer to hypothetical projection magnitude (higher numbers = stronger projection magnitude)

This model predicts that projection would also occur, but to a lessened degree, in the Personal Meta-Stereotype condition (where the participant receives information that her/his interaction partner believes s/he favours Whites). Again, in this condition participants would use this information they received about the self to make inferences about their group. However, less projection is expected in this condition because this self-relevant information is second-hand information. That is, in the Personal Self-Stereotype condition, the information comes from the participant's apparent test results, whereas in the Personal Meta-Stereotype condition the information comes from one's partner's apparent impressions of the participant's test results. This model predicts that baseline levels of projection will occur in all other conditions.

Model C: Motivated threat model. This model assumes that projection is a motivated process whereby people project their personal attitudes onto their group when they feel threatened, in an attempt to validate shortcomings (e.g., Campbell, 1986). This may reflect attributive projection (Bramel, 1962, 1963; Holmes, 1968, 1978), whereby people project traits/attitudes onto (often positively evaluated) others to reduce the anxiety of holding a relatively undesirable attitude. This model predicts that projection will occur most strongly in both the Personal Self-Stereotype ("*I favour Whites*") and Personal Meta-Stereotype ("*Black partner thinks I favour Whites*") conditions. These conditions are expected to be highly threatening to one's self-concept, thus it is predicted that participants will seek support in their apparent attitudes by projecting onto their ingroup. The Personal Self-Stereotype condition was expected to lead to the most self-concept threat of the two, given that this information comes from a first- *versus* second-hand source (i.e., directly from computer's tabulation of self-provided data *vs.* one's

interaction partner's reaction to the data). Thus, this model predicts the strongest projection in the Personal Self-Stereotype condition. This model predicts baseline projection in all other conditions. Thus, the difference between Models B and C is a matter of magnitude, not direction. Projection is expected to be of greater magnitude in Model C due to the self-concept threat experienced.

Model D: Introjection (Informational influence) model. This model is based in the previously described possibility that projection phenomena actually represent 'introjection' (see Krueger, 2002), an inference that the self is similar to the group (rather than group as similar to the self). This model predicts that the greatest self-group congruency should occur most strongly in the *Group Self-Stereotype condition*, where participants receive information regarding high levels of ingroup favouritism among White Brock students generally. This model predicts that in this condition participants will integrate group information into the self. Previous research has shown that people (for the most part, those highly identified with the ingroup) will readily rate themselves to be similar to their group on a certain trait, even negative traits (Hodson & Esses, 2002). The same could be true for ingroup favouritism. This would reflect a form of informational social influence (Deutsch & Gerard, 1955) whereby people seek cues from others when they are unsure how to respond, behave, or think. This model also predicts self-group congruence (but to a lesser degree than the Group Self-Stereotype condition) in the Group Meta-Stereotype condition. Here again, each participant receives information regarding her/his group, but self-group congruency is expected to be slightly weaker because this information comes from a second-hand source (one's interaction

partner's reaction to the computer-based data). This model predicts baseline projection levels in other conditions.

Model E: Normative influence model. This model holds that projection is motivated to the extent that people project out of a desire to be normal or similar to the group. This model predicts that the strongest self-group congruence should occur in both the Personal Self-Stereotype (“*I favour Whites*”) and Group Self-Stereotype (“*White Brock students favour Whites*”) conditions. In the Personal Self-Stereotype condition, one receives information that s/he favours Whites, and thus would be expected to rate the ingroup to similarly favour Whites out of a desire to render the group to be similar to her/him and be normal. Self-group congruence would be expected to be *equally strong* in the Group Self-Stereotype condition whereby receiving information regarding Whites’ ingroup favouritism would cause participants to rate themselves similarly to be ‘normal’ or fit in with the group. This model predicts somewhat less self-group congruency in the Personal Meta-Stereotype and Group Meta-Stereotype conditions. Again, according to this model, when a participant receives information regarding self (or group) ingroup favouritism, the participant will rate the ingroup (or self, depending on condition) to be similar to the information received in order to be ‘normal’ and/or likeable. This reflects a form of normative social influence (Deutsch & Gerard, 1955) whereby people are influenced by a desire to be accepted by others. Self-group congruence was expected to be weaker in the Meta-Stereotype conditions as the information again comes from a second-hand source. This model predicts that no or baseline levels of projection should occur in both Other-Stereotype conditions.

Overall. Based on the results of Study 1, and the nature of the socially-sensitive attitudes being projected, I predicted that the projection of intergroup attitudes would be motivated by feelings of self-concept threat. Given prevailing norms of egalitarianism in Western society, prejudice is generally viewed to be undesirable (see Blanchard, Lilly, & Vaughn, 1991; Monteith, Deneen, & Tooman, 1996), and self-reports of racial bias are becoming less common (Dovidio & Gaertner, 1998; Schuman et al., 1997). Evidence stating that one is particularly high on such a quality then, likely threatens one's self-concept. Recall that in Study 1, Whites who admitted being prejudiced rated the percentage of prejudiced Whites in the population to be 70% (significantly higher than 50%), whereas those denying prejudice rated the percentage of prejudiced Whites to be roughly 46% (close to, but under, 50%). This large difference ($d = 1.40$) between those acknowledging and denying personal prejudices implies motivation on behalf of those claiming to hold socially-sensitive attitude positions. Both groups rated Whites in the population to have similar beliefs to their own, but those acknowledging prejudice exaggerated this rating compared to those denying personal prejudice. These results suggest that the projection of prejudice/ingroup favouritism is motivated by a desire to reduce feelings of self-concept threat. Thus, it was predicted that participants in the self-concept threatening conditions (the Personal Self- and Personal Meta-Stereotype conditions) would react by perceiving heightened commonality between their attitudes and those of others. The *Motivated threat* model was the model most consistent with a self-concept threat-based account of the projection of intergroup attitudes, and was therefore predicted to garner the most support (even so, the validity of all models was examined). This would provide evidence for the following hypotheses:

H2a: Projection (perceived self-group congruence) would be strongest under conditions of self-concept threat, given that projection can serve a self-protective function (e.g., Bramel, 1962, 1963; Newman et al., 1997). Thus, when people are informed they are prejudiced (a socially undesirable attribute), they presumably exaggerate similar biases among their peers.

H2b: The direction of the projection of intergroup attitudes would be from self to group. That is, participants would use information about the self to make inferences about the group, as opposed to using information about the group to make inferences about the self.

Anticipated Intergroup Contact Reactions

As discussed above, intergroup perceptions can often have a negative impact on intergroup interactions (e.g., Britt et al., 1996; Butz & Plant, 2006; Devine et al., 1996), and negative intergroup interactions can be quite detrimental to intergroup relations (e.g., Shelton & Richeson, 2005). Still more detrimental is when intergroup perceptions lead to the avoidance of intergroup contact, given that contact is central to prejudice reduction and improved intergroup relations (see Pettigrew & Tropp, 2006). At this point, it is not entirely clear which types of perceptions (i.e., meta-stereotypes or other-stereotypes) most negatively affect intergroup interactions. The experimental conditions in the current study allowed for this investigation. Study 2 specifically investigated the impact of Meta-Stereotype and Other-Stereotype manipulations on participants' expectations regarding an anticipated intergroup interaction. Both Meta- and Other-stereotype manipulations should lead to concerns regarding intergroup interactions (i.e., intergroup contact threat) given that they both involve perceptions that one (or one's group) is viewed negatively by an outgroup member (or entire outgroup), but it is unclear which more negatively

influences an intergroup interaction. As with tests of the projection outcomes, several theoretical models predicting reactions to the upcoming interaction were forwarded. Prior to an overview of these theoretical models, a review of the available literature on this topic is presented.

Why is this issue of importance? It has been predicted in previous research (e.g., Vorauer et al., 1998) that meta-stereotypes exert a more negative impact on intergroup interactions than other-stereotypes. Meta-stereotypes are believed to have a greater impact than other-stereotypes on intergroup interactions as they are believed to be more threatening and anxiety-provoking than other-stereotypes (Vorauer et al., 1998), especially for majority groups such as Whites (Shelton, 2003). Meta-stereotypes presumably lead to intergroup contact threat. Clearly the belief that one (or one's group) is viewed negatively by an outgroup member would create concerns about how smooth or awkward the intergroup interaction will be. However, meta-stereotype information has never been manipulated experimentally to investigate this potential, and the research regarding the impact of meta-stereotypes on intergroup interactions is limited. Vorauer and Turpie (2004, Study 2) found that low prejudice Whites experienced heightened evaluative concerns and anxieties regarding an intergroup interaction when their Aboriginal interaction partner reportedly perceived experiencing a high (*vs.* low) amount of discrimination at the university (here the meta-stereotype that their ingroup is prejudiced was made salient to Whites, but not directly manipulated, i.e., participants were not directly informed that their partner thought Whites were prejudiced). Results of another study (Vorauer et al., 1998, Study 2) showed that meta-stereotypes exerted a greater impact on anticipated enjoyment of an intergroup interaction than did other-

stereotypes, and there was a relation between meta-stereotypes and anticipated negative emotional reactions, whereas no such relation existed between other-stereotypes and emotions. It is important to note though that this research did not involve direct meta-stereotype manipulation, and targeted Aboriginals as an outgroup. The current Study examined whether meta-stereotypes are indeed more influential than other-stereotypes, as previous research would imply, or if a divergent model is supported. The three following models were tested (see Table 6.)

Model X: Meta-stereotypes dominant. This model is based on the premise that meta-stereotypes exert more negative influence on intergroup interaction expectations than other-stereotypes. This possibility has been predicted by previous research (e.g., Vorauer et al., 1998). Thus, the *Meta-stereotypes dominant* model predicts that intergroup contact expectations will be very negative in the Personal and Group Meta-Stereotype conditions, somewhat negative in the Personal and Group Other-Stereotype conditions, and neutral (or baseline) in the Personal and Group Self-Stereotype conditions.

Model Y: Meta- and other-stereotypes equally dominant. This model is based on the possibility that the negative impact of meta- and other-stereotypes on intergroup interaction expectations is equal. As stated above, both Meta- and Other-Stereotype manipulations are expected to lead to intergroup contact threat. Thus, it is possible that regardless of whether the outgroup holds a negative attitude toward the participant or her/his group (other-stereotype), or believes the participant or her/his group holds a negative attitude toward them (meta-stereotype), equal levels of intergroup contact threat are generated, leading to equally negative intergroup contact expectations. Thus, the

Table 6.

Potential Models Regarding Anticipated Intergroup Contact Reactions Outcomes (Study 2)

Model	Experimental Condition					
	Self-stereotype		Other-stereotype		Meta-stereotype	
	Personal	Group	Personal	Group	Personal	Group
<i>X. Meta-stereotypes dominant</i>	1	1	2	2	3	3
<i>Y. Meta- and Other-stereotypes equally dominant</i>	1	1	3	3	3	3
<i>Z. Other-stereotypes most dominant</i>	1	1	3	3	2	2

Note. Numbers within table refer to hypothetical magnitude of anticipated contact negativity ratings.

Meta- and other-stereotypes equally dominant model predicts very negative contact expectations in the Personal and Group *Meta-stereotype* conditions, and the Personal and Group *Other-Stereotype* conditions. This model predicts neutral (or baseline) contact expectations in the Personal and Group Self-Stereotype conditions.

Model Z: Other-stereotypes dominant. This model is based on the possibility that other-stereotypes exert more negative influence on intergroup contact expectations than meta-stereotypes. It is possible that in the current study, concern regarding outgroup prejudice (other-stereotypes) may create more intergroup contact threat, and hence lead to more negative interaction expectations than concerns regarding outgroup perceptions of ingroup prejudice (meta-stereotypes). Thus, the *Other-stereotypes dominant* model predicts that intergroup contact expectations will be very negative in the Personal and Group Other-stereotype conditions, somewhat negative in the Personal and Group Meta-Stereotype conditions, and neutral (or baseline) in the Personal and Group Self-Stereotype conditions.

Overall. It should be noted that in all models no differences are expected between each Personal and Group stereotype condition. Where differences are expected to exist is among Meta-, Other-, and Self-stereotype manipulations. In all models Personal and Group Meta-Stereotype manipulations are expected to have equal influence, given that both are expected to be equally threatening in terms of intergroup contact threat, and that White participants were expected to generalize their partner's beliefs about Whites to the self and *vice versa* (e.g., "My partner thinks Whites are high in ingroup favouritism, I am White, so she must think this about me as well"). This parallels the finding that meta-stereotypes of ingroup and meta-stereotypes of self as ingroup member tend to be similar

(Méndez et al., 2007). In all models Personal and Group Other-Stereotype manipulations are expected to be equally influential given that both Other-Stereotype conditions are expected to be equally threatening, and that White participants are expected to generalize beliefs of Blacks in the sample to their Black interaction partner and vice versa (e.g., “Blacks feel this way, my partner is Black, she likely feels this way as well”), paralleling outgroup homogeneity effects (e.g., Judd & Park, 1988). Finally, in all models both Personal and Group Self-Stereotype manipulations are not expected to impact anticipated intergroup contact expectations. The Self-Stereotype manipulations are not expected to induce intergroup contact threat, and therefore not expected to lead to any strong interaction expectations. In the Self-Stereotype conditions, neutral or baseline ratings of contact expectations are expected. The inclusion of these conditions was important nonetheless, for comparison purposes.

In keeping with Vorauer et al.’s (1998) prediction, I expected that Meta-Stereotype manipulations would impact the intergroup interaction expectations more negatively than Other-Stereotype manipulations. It was expected that Meta-Stereotype manipulations would lead to higher levels of intergroup contact threat, and hence have a more negative impact. It was expected that both Personal and Group Other-Stereotype manipulations would create negative expectations regarding the intergroup interaction, but that these expectations would be less negative than those in the Meta-Stereotype conditions. The belief that one’s partner (or one’s partner’s group) is prejudiced against one’s ingroup is likely to create intergroup contact threat, but such a belief is often more threatening for minority than majority groups (Shelton, 2003). Historically, majority groups are the perpetrators of prejudice, while minority groups are the victims (Shelton,

2003); thus a majority group (e.g., Whites) is less likely to be concerned over being a target of prejudice, and more likely to be concerned with appearing prejudiced (i.e., meta-stereotypes). Therefore, Other-Stereotype conditions were expected to create negative intergroup contact expectations, but less negative expectations than Meta-Stereotype conditions.

Thus, for majority group members such as Whites, concerns about how prejudiced one (or one's group) is viewed (i.e., Meta-Stereotype manipulations) were expected to lead to high levels of intergroup contact threat (and hence the most negative contact expectations and reactions). Concerns that one's outgroup partner (or partner's group) is prejudiced (i.e., Other-Stereotype manipulations) were expected to also lead to intergroup contact threat (and negative expectations) but to a lesser degree (based on Vorauer et al., 1998). As mentioned previously, concerns about one's own prejudice level (i.e., Personal Self-Stereotype manipulation) was expected to lead to self-concept threat, which was not expected to have an impact on intergroup contact expectations. Lastly, concerns about ingroup bias (i.e., the Group Self-Stereotype condition) were not expected to lead to much threat to participants or influence intergroup contact expectations, brushed off as relatively irrelevant to the participant's own interaction. It is important to note that the Personal Meta-Stereotype manipulation was expected to be threatening to both the self-concept and intergroup contact (see Table 4). However, as stated, introducing self-concept threat was expected to provide minimal influence on intergroup contact expectations. Thus, intergroup contact reactions in the Personal Meta-Stereotype condition were expected to be governed primarily by intergroup contact threat.

In summary, it was expected that the *Meta-stereotypes dominant model* would be supported, with the following hypotheses about the upcoming intergroup contact reactions:

H3: Participants in both Meta-, and both Other-Stereotype conditions would exhibit negative interaction expectations, but participants in the Meta-Stereotype conditions would exhibit relatively more negative interaction expectations than those in the Other-Stereotype conditions.

Exploratory Investigations

For exploratory purposes, differences in ingroup identification and prejudice justification among experimental groups were examined. No predictions were made regarding these relations.

Method

Participants

Two hundred and forty-six Brock University Students participated in the Study for course participation or \$5. Because the primary interest of the study was Whites, 24 non-White participants (Asian, Aboriginal, Middle Eastern, Hispanic, and/or Other) and 2 part-Black participants were excluded from the analyses. Fourteen suspicious participants (i.e., those who were accurate at identifying the hypotheses of the study) were also excluded. After screening the data, 1 participant was excluded due to clear random responding, and another was excluded due to having outlier scores (> 3 standard deviations above the mean) on six key variables (see preliminary analyses section). This left a final sample of 204 (74% female). Participants ranged in age from 17-71 ($M = 20.04$, $SD = 4.48$).

Procedure

The study took place entirely on computers in a lab, supervised by the researcher. Participants sat at private partitioned computer terminals, responding to various measures and receiving feedback messages. The experiment involved a “pre-manipulation” phase, a “manipulation” phase, and a “post-manipulation” phase.

Pre-manipulation phase. After consenting (see Appendix C.2) to participation, participants completed several preliminary measures (see Materials), some of which were intended to gather pre-manipulation data, but primarily to enhance the manipulations of the study pertaining to feedback about ingroup favouritism.

Manipulation phase. Next, participants received a message from the computer stating that their scores on their preliminary measures were being tabulated (see

Appendix C.9 for wording of messages). Participants then read that the study would involve responding to some questionnaires, followed by a brief interaction with a partner. Participants then received demographic information from their apparent partner. Each participant received the same partner description (participant X: a Black 20 year old who liked watching TV and hanging out with friends), with the exception that each received a random partner number and partners matched the participant's sex.

Participants were then randomly assigned to one of the conditions mentioned above (see Table 4). To do this, participants received a message from the computer stating that they would receive information pertaining to preliminary measure outcomes. Depending on the condition they were assigned to, each participant was told they would receive information based on either the outcome of: (a) their own (Personal Self-Stereotype condition); (b) their partner's (Personal Other-Stereotype condition) or other participants' (Group Self- and Other-Stereotype conditions) preliminary measures; or (c) their partner's interpretation of the participant's preliminary measures (Personal and Group Meta-stereotype conditions). Participants then received that information (e.g., in the Personal Self-Stereotype condition: "It has been determined that you strongly favour Whites over Blacks", see Appendix C.9 for details) reflecting their random assignment to one of six conditions. This information was displayed on the screen for several seconds before participants could move on.

Post-manipulation phase. Participants responded to post-manipulation measures, most relating to their expectations about the upcoming interaction (see Materials). Participants then answered suspicion and manipulation check measures, and were

debriefed (see Appendices C.20 & C.21). Following this, participants received proof of participation and payment (if necessary).

Materials

During the pre-manipulation phase, participants completed several measures:

Demographics (see Appendix C.3). Participants provided demographic information in the pre-manipulation stage to ostensibly aid in the selection of their appropriate interaction partner. Participants provided their sex, ethnicity, age, year of study, and a list of hobbies.

IAT. A measure of implicit ingroup favouritism, the Implicit Associations Test (IAT; Greenwald, McGhee, & Schwartz, 1998; Greenwald, Nosek, & Banaji, 2003) was included. The IAT paired Black and White faces with positive and negative terms. This reaction-time measure is difficult to consciously control. The IAT compares reaction times in response to congruent items (e.g., White-positive; Black-negative) with incongruent items (e.g., Black-positive; White-negative). The more rapidly one associates positive terms with a particular group, the more one will be considered to favour that group. The IAT was used to enhance the cover story of the experiment in that participants were led to believe that their (or other participants') 'scores' on this measure would be tabulated and received as feedback.

Prejudice relevant measures (see Appendix C.4). The Modern Racism Scale was again employed (MRS, McConahay et al., 1981) to measure prejudice. Also, serving as an alternative measure of prejudice, was a self-rating of ingroup favouritism measure (analogous to Study 1's acknowledgement of personal bias measure). It was a one-item

measure (“To what extent do you favour Whites over Blacks”) on a scale ranging from 0 (not at all) to 10 (very much).

Projection (see Appendix C.5). As in Study 1, to measure projection of ingroup favouritism, participants were first asked to indicate whether they favoured Whites over Blacks on a dichotomous measure (yes/no response). Participants then rated the percentage of Whites and Blacks they believed to favour their respective ingroups (group ingroup favouritism; “percentage measures”; 0-100%). As another group ingroup favouritism measure, participants rated the extent to which Whites and Blacks favour their respective ingroups on scales ranging from 0 (not at all) to 10 (very much; “degree measures”). To create a “projection” index for each participant, an absolute difference score was obtained whereby the continuous measure of self-rated ingroup favouritism (see prejudice measures above) was subtracted from the second group ingroup favouritism measure (degree measure).¹⁴ The degree measure was used as both it and continuous ingroup favouritism were measured on the same scales and referred to “extent” of ingroup favouritism (rather than one referring to extent and one to percent). Indices were computed for ingroup and outgroup projection. Using such difference scores, zeros would indicate perfect projection (i.e., complete self-group congruence), and scores deviating significantly from zero would indicate a lack of self-group congruence, as in Study 1.

Big Five (see Appendix C.6). The Big Five personality inventory (BFI, John, Donahue, & Kentle 1991) was used to enhance the cover story of the experiment (i.e.,

¹⁴ These measures were multiplied by 10 before calculating the projection index such that projection index scores range from 0-100. This is for ease of understanding as post-manipulation prejudice ‘extent’ ratings ranged from 0-100.

some participants were led to believe that their interaction partner would form opinions based on preliminary measures). The BFI is a 44-item scale with scores ranging from 1 (disagree strongly) to 5 (agree strongly), which measures Extroversion, Conscientiousness, Neuroticism, Openness to Experience, and Agreeableness. A sample item from the scale is “I see myself as someone who is inventive.”

Meta-stereotypes and other-stereotypes (see Appendix C.7 & C.8). To measure pre-manipulation *meta-stereotype of self as individual*, participants rated the extent to which Blacks in general view her/him to show ingroup favouritism. For pre-manipulation *meta-stereotype of self as ingroup member*, participants were asked this question again, but group membership was salient (i.e., Based on your membership in the group, Whites, rate the extent to which Blacks view you to favour Whites over Blacks). To measure pre-manipulation *meta-stereotypes of ingroup*, participants rated the extent to which Blacks view Whites to show ingroup favouritism. As a second measure of pre-manipulation meta-stereotypes of ingroup, participants rated the percentage of Whites that Blacks believe to show ingroup favouritism. Ratings of Black ingroup favouritism used to calculate outgroup projection (see projection materials) also served as a measure of pre-manipulation other-stereotypes. As mentioned above, participants rated the extent to which Blacks favoured Blacks over Whites and the percentage of Blacks who favour Blacks over Whites. All degree measures were on scales ranging from 0 (not at all) to 10 (very much), whereas percentage ratings ranged from 0-100%.

Post-manipulation, participants responded to questions regarding the alleged upcoming interaction, as well as measures of projection, ingroup identification and prejudice justification.

Contact-specific intergroup anxiety and outgroup avoidance (see Appendix C.10).

Stephan and Stephan's (1985) intergroup anxiety scale, modified to refer to the specific interaction, gauged anxiety anticipated during the interaction. The avoidance measure consisted of the mean of two items: (a) the desire to avoid the upcoming interaction, and (b) the extent to which participants would rather not interact with their partner, which were on a 0 (not at all) to 10 (very much) scale.

Personalized meta-stereotypes and other-stereotype (see Appendices C.11 & C.12). To measure the *meta-stereotype of self as individual*, participants rated the extent to which their partner would view her/him to show ingroup favouritism. For *meta-stereotype of self as ingroup member*, participants were asked this question again, but group membership was salient (i.e., Based on your membership in the group, White Brock students, rate the extent to which your partner will view you to favour Whites over Blacks). To measure *meta-stereotypes of ingroup*, participants rated the extent to which their partner viewed White Brock students to show ingroup favouritism, and also the percentage (0-100%) of White Brock students their partner viewed to show ingroup favouritism. These were all measures of 'personalized meta-stereotypes' (see Vorauer et al., 1998), as they refer to the thoughts of one specific outgroup member (the interaction partner). To assess the personalized 'other-stereotype', participants rated the extent to which their partner favoured Blacks over Whites. All of these ratings scales ranged from 0 (not at all) to 10 (very much), except of the ingroup meta-stereotype percentage measure (0-100%).

Quality of the interaction (see Appendix C.13). Three items adapted from Voci and Hewstone (2003) were employed to assess anticipated quality of the interaction

(original Cronbach's $\alpha = .67$). Each participant rated the extent to which s/he anticipated the interaction with the partner to be (a) pleasant, (b) cooperative, (c) superficial and insincere. Participants also rated their perceptions of their partner's responses to these items. Items were rated on a 0 (not at all) to 10 (very much) scale.

Post manipulation projection (see Appendix C.14). Projection was measured as in the pre-manipulation phase, with the exception that self-rated and group (White and Black) ingroup favouritism degree measures were on scales ranging from 0 to 100, to provide variety for participants.

Ingroup identification (see Appendix C.15). A new identification measure was employed in Study 2 in an attempt to attain higher reliability than obtained in Study 1. This 3-item measure adapted from Hodson et al. (2009) ranged from 0 (not at all) to 10 (very much) and had an original Cronbach's $\alpha = .86$. A sample item from this scale is 'How important is being White to your self-identity?'.

Prejudice justification (see Appendix C.16). The general prejudice justification measure (Esses & Hodson, 2006) used in Study 1 was employed.

Behavioural measure of avoidance (see Appendix C.17). Near the end of the study participants were given a choice whether or not to participate in the interaction with their partner. This was a yes/no choice, worded such that "yes" meant the participant would like to interact with her/his partner, and "no" meant s/he would rather have a different partner. For clarity purposes, responses on the "yes" measure will be termed "approach" and responses on the "no" measure will be termed "avoidance."

Following all measures, participants completed suspicion and manipulation checks.

Suspicion checks (see Appendix C.18). Participants responded to an open-ended measure asking them to guess the hypotheses of the study. Participants also responded to a dichotomous measure asking whether they found anything about the study suspicious (yes *versus* no). Participants responding “yes” were asked to elaborate in an open-ended space.

Manipulation check (see Appendix C.19). Due to the nature of the study, it was determined that a traditional manipulation check (i.e., immediately following the manipulation, see Pelham & Blanton, 2007) would likely compromise the study, either by arousing suspicion about the purposes of the study, or by systematically biasing responses (for a similar rationale, see Blanton, Pelham, Dehart, & Carvallo, 2001). Instead, an alternative manipulation check was employed. At the closing of the 50 minute study, participants were asked to choose which information they were given by the computer at the beginning of the study, selecting from a list of 7 options (1 option each referring to each condition, and 1 stating “I did not receive any of this information”).

Results

Preliminary Analyses and Descriptive Statistics

Preliminary analyses were conducted to investigate missing data, normality, and outliers. There were no data missing on any of the relevant final calculated variables because in most cases participants were not permitted to continue the computer-based study without entering data, with the exception of some variables on multi-item scales. For these variables, the mean of the items was calculated to avoid statistical concerns with missing data. Thus, individual items used to calculate each of these variables were investigated for missing data as well. It was found that there was 1 missing value on contact-specific intergroup anxiety item 5, 2 values missing on contact-specific intergroup anxiety item 6, and 1 value each missing from contact-specific intergroup anxiety items 8, 9, and 10. On general prejudice justification there was 1 value each missing from items 1, 2, and 6. Visual examination revealed that one participant was missing data on 3 items of the contact-specific intergroup anxiety scale. However, it was determined that intergroup anxiety could be accurately obtained by calculating the mean of the remaining items, so this participant was not excluded from further analyses. Examination of the data revealed that in the other case where there were multiple items missing from one scale, these missing items were not from the same participant. Thus, because such a small amount of data was missing from these scales, it was deemed acceptable to use the mean function to calculate the variables, and the (final calculated) variables were considered to be without missing data. There were also no missing data found on any of the demographic variables (age, sex, ethnicity).

To investigate normality, skewness and kurtosis values were examined for each

continuous variable. Based on the criteria that skewness coefficients and kurtosis values of $> |2|$ indicate distributions deviating from normality, distributions for all of the variables can be considered normal with regard to skewness and kurtosis. These values are presented in Table 7.

To examine potential univariate outliers in each of the continuous variables of interest, scores on each variable were converted to z-scores. Based on the criterion that z-scores $> |3|$ are probable outliers, examination of z-score frequencies and visual examination of the data revealed outliers on several variables. A pattern emerged, where one participant presented outlier scores on 6 variables. After performing several key analyses with and without this participant, it was determined that this participant was erroneously skewing results and should be excluded from further analyses. With this participant excluded, examination of the data revealed only 2 outliers on pre-manipulation ingroup meta-stereotype (degree measure), and 3 outliers on general prejudice justification. The outliers that were detected were not due to data entry errors, nor did they skew results. Thus, with no justifiable reason to remove these outliers, they were included in subsequent analyses. With regard to tested regression models, there were 3 outliers in the solution identified based on the criterion that standardized residuals greater than $|3|$ are probable outliers. However, further analyses revealed that these outliers were not influential enough to warrant removal from the main analyses (e.g., no differences found when conducting key analyses with and without these outliers).

Descriptive statistics for key continuous variables collapsing across conditions are presented in Table 7, and frequency statistics for all key categorical variables collapsed

Table 7.

Descriptive Statistics for Key Continuous Variables, Collapsed across Conditions (Study 2)

Variable (Possible range)	Mean	SD	Skew	Kurt
Pre-manipulation phase				
Self-rating of ingroup favouritism (0-100) ^a	23.03	26.57	.967	-.307
Prejudice against Blacks, MRS (0-4)	.84	.58	.978	.718
Ingroup's ingroup favouritism, percent (0-100)	54.29	21.82	-.286	-.803
Outgroup's ingroup favouritism, percent (0-100)	64.58	22.94	-.535	-.356
Ingroup's ingroup favouritism, degree (0-100) ^a	55.24	20.83	-.364	-.601
Outgroup's ingroup favouritism, degree (0-100) ^a	65.14	20.40	-.631	.103
Ingroup projection index, (0-100) ^a	33.67	23.46	.318	-.922
Outgroup projection index, (0-100) ^a	43.77	25.74	.000	-1.04
Meta-stereotype of self as individual (0-10)	4.64	3.19	-.112	-1.33
Meta-stereotype of self as ingroup member (0-10)	5.13	3.02	-.364	-1.153
Meta-stereotype of ingroup, degree (0-10)	6.82	2.05	-.714	.291
Meta-stereotype of ingroup, percent (0-100)	71.82	21.67	-.762	-.155
Post-manipulation phase				
contact-specific intergroup anxiety (-3 to +3)	-.83	1.10	.145	-.502
contact-specific outgroup avoidance (desire to avoid) (0-10)	2.71	2.61	.823	-.108
personalized meta-stereotype of self as individual (0-10)	4.66	3.20	-.139	-1.28
personalized meta-stereotype of self as ingroup member (0-10)	5.00	3.05	-.342	-1.13
personalized meta-stereotype of ingroup, degree (0-10)	5.66	2.86	-.496	-.751
personalized meta-stereotype of ingroup, percent (0-100)	62.10	24.44	-.805	-.025
personalized other-stereotype, degree (0-10)	5.52	2.91	-.371	-.859
anticipated quality of interaction, self ratings (0-10)	7.16	1.71	.018	-.775
anticipated quality of interaction, partner ratings (0-10)	6.59	1.95	-.012	-.521
Self-rating of ingroup favouritism (0-100)	24.27	24.87	.757	-.812
Ingroup's ingroup favouritism, percent (0-100)	56.70	22.42	-.499	-.588

	<i>Mean</i>	<i>SD</i>	<i>Skew</i>	<i>Kurt</i>
Post-manipulation phase (continued)				
Outgroup's ingroup favouritism, percent (0-100)	63.19	22.78	-.801	.076
Ingroup's ingroup favouritism, degree (0-100)	52.60	22.93	-.483	-.538
Outgroup's ingroup favouritism, degree (0-100)	63.28	20.87	-.667	-.183
Ingroup projection index (0-100)	29.27	22.34	.589	-.732
Outgroup projection index (0-100)	40.08	23.53	.299	-.840
General prejudice justification (1-7)	2.18	.92	.900	.800
Ingroup identification (0-10)	5.54	2.21	-.299	-.599

Note. Pre-manipulation phase measures marked with the superscript 'a' originally ranged from 0-10 but were multiplied by 10 to facilitate comparisons with other measures on 0-100 scales. Lower scores on the projection index represent more self-group congruency (i.e., more projection).

across conditions are presented in Table 8. Descriptive statistics for all key post-manipulation continuous variables within conditions can be found in Table 9, and key post-manipulation categorical variable frequencies within conditions can be found in Table 10. Note that descriptive statistics of both pre- and post-manipulation variables are presented.

Sex differences on key pre-manipulation projection and stereotype variables were examined, with no significant sex differences obtained. Thus, further sex differences were not examined.

Correlations among Key Variables

Correlations among key variables are presented in Tables 11 and 12. For clarity purposes, Table 11 displays two-tailed correlations between pre-manipulation variables; Table 12 displays two-tailed correlations between post-manipulation variables. Most correlations were consistent with expectations. Key correlations will be discussed subsequently. Note that the correlations of both pre- and post-manipulation variables are presented below.

Differences among Conditions on Key Pre-manipulation Variables

Several one-way ANOVAs were conducted to test for potential differences among experimental groups on the pre-manipulation variables. None of these ANOVAs were significant. However, examination of Fisher's LSD post hoc tests revealed marginal differences on the ingroup projection index, the outgroup projection index, and the meta-stereotype of ingroup (degree) variables. Despite this, given that the omnibus test was not significant, and that the differences observed were merely marginal, the pre-manipulation variables can be considered equivalent across experimental conditions for the most part.

Table 8.

Frequency Statistics for Key Categorical Variables, Collapsed across Conditions (Study 2)

	% YES	% NO
Pre-manipulation		
Dichotomous ingroup favouritism self-rating	25.0	75.0
Post-manipulation		
Dichotomous ingroup favouritism self-rating	27.5	72.5
	% APPROACH	% AVOID
Behavioural avoidance	89.7	10.3

Note. Recall that 'yes' responses on behavioural avoidance represent approach, while 'no' represents avoidance.

Table 9.

Descriptive Statistics for Key Post-Manipulation Variables within Experimental Conditions (Study 2)

Variable (Possible range)	Personal Self- Stereotype (<i>n</i> = 34) <i>M</i> (<i>SD</i>)	Group Self- Stereotype (<i>n</i> = 34) <i>M</i> (<i>SD</i>)	Personal Other- Stereotype (<i>n</i> = 35) <i>M</i> (<i>SD</i>)	Group Other- Stereotype (<i>n</i> = 35) <i>M</i> (<i>SD</i>)	Personal Meta- Stereotype (<i>n</i> = 36) <i>M</i> (<i>SD</i>)	Group Meta- Stereotype (<i>n</i> = 30) <i>M</i> (<i>SD</i>)
contact-specific intergroup anxiety (-3 to +3)	-1.02 (1.10)	-1.28 (.82)	-.63 (1.05)	-.78 (1.15)	-.52 (1.20)	-.75 (1.16)
contact-specific outgroup avoidance (desire to avoid (0-10)	1.85 (2.44)	2.34 (2.31)	3.28 (2.31)	2.68 (2.63)	3.09 (2.56)	3.00 (3.30)
personalized meta-stereotype of self as individual (0-10)	3.38 (2.73)	4.47 (3.30)	5.17 (3.30)	5.29 (3.15)	4.64 (3.31)	5.00 (3.20)
personalized meta-stereotype of self as ingroup member (0-10)	3.62 (2.63)	5.12 (2.94)	5.37 (3.24)	5.86 (2.80)	4.64 (2.94)	5.40 (3.48)
personalized meta-stereotype of ingroup, degree (0-10)	3.91 (2.82)	5.15 (2.93)	6.71 (2.33)	6.17 (2.47)	5.53 (2.62)	6.53 (3.21)
personalized meta-stereotype of ingroup, percent (0-100)	45.29 (26.91)	58.35 (26.92)	72.72 (17.85)	65.63 (19.78)	60.47 (23.60)	70.83 (21.17)
personalized other-stereotype, degree (0-10)	3.47 (2.68)	5.00 (2.84)	7.94 (2.21)	6.37 (2.49)	4.64 (2.58)	5.70 (2.62)
anticipated quality of interaction, self ratings (0-10)	8.10 (1.47)	7.38 (1.41)	6.56 (1.43)	7.12 (1.81)	6.93 (1.86)	6.88 (1.87)
anticipated quality of interaction, partner ratings (0-10)	7.50 (1.89)	6.98 (1.51)	6.03 (1.60)	6.57 (1.99)	6.11 (2.26)	6.35 (2.13)
Self rating of ingroup favouritism (0-100)	21.09 (23.30)	21.12 (23.56)	31.23 (26.01)	25.26 (25.60)	21.53 (23.84)	25.47 (27.16)
Ingroup's ingroup favouritism, percent (0-100)	49.62 (26.66)	58.35 (21.98)	60.09 (17.62)	63.97 (21.62)	50.22 (20.08)	58.17 (23.83)

Variable (Possible range)	Personal Self- Stereotype (<i>n</i> = 34) <i>M</i> (<i>SD</i>)	Group Self- Stereotype (<i>n</i> = 34) <i>M</i> (<i>SD</i>)	Personal Other- Stereotype (<i>n</i> = 35) <i>M</i> (<i>SD</i>)	Group Other- Stereotype (<i>n</i> = 35) <i>M</i> (<i>SD</i>)	Personal Meta- Stereotype (<i>n</i> = 36) <i>M</i> (<i>SD</i>)	Group Meta- Stereotype (<i>n</i> = 30) <i>M</i> (<i>SD</i>)
Outgroup's ingroup favouritism, percent (0-100)	53.44 (28.29)	63.09 (20.89)	67.43 (17.16)	69.63 (21.17)	60.89 (21.94)	64.67 (24.10)
Ingroup's ingroup favouritism, degree (0-100)	43.71 (25.85)	56.65 (24.03)	56.80 (20.78)	59.14 (17.94)	46.61 (21.78)	52.77 (24.04)
Outgroup's ingroup favouritism, degree (0-100)	56.17 (22.16)	64.41 (20.77)	66.28 (21.43)	69.43 (17.31)	59.72 (21.97)	63.66 (19.91)
Ingroup projection index (0-100)	22.79 (18.60)	36.11 (26.15)	27.85 (20.75)	35.54 (20.68)	25.41 (23.60)	27.83 (21.70)
Outgroup projection index (0-100)	35.20 (22.27)	44.41 (24.91)	38.25 (22.74)	46.00 (22.67)	38.19 (26.24)	38.20 (21.50)
General prejudice justification (1-7)	1.92 (.81)	2.26 (.81)	2.31 (1.20)	2.19 (.90)	2.35 (.96)	2.05 (.76)
Ingroup identification (0-10)	4.87 (2.28)	5.61 (2.42)	5.78 (2.03)	5.65 (2.28)	5.80 (2.06)	5.52 (2.21)

Table 10.

Frequency Statistics for Key Post Manipulation Categorical Variables, within Experimental Condition (Study 2)

	Personal Self-Stereotype (<i>n</i> = 34)		Group Self-Stereotype (<i>n</i> = 34)		Personal Other-Stereotype (<i>n</i> = 35)		Group Other-Stereotype (<i>n</i> = 35)		Personal Meta-Stereotype (<i>n</i> = 36)		Group Meta-Stereotype (<i>n</i> = 30)	
	%	%	%	%	%	%	%	%	%	%	%	%
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Dichotomous ingroup favouritism rating self-rating	26.5	73.5	20.6	79.4	28.6	71.4	28.6	71.4	25.0	75.0	36.7	63.3
	% Approach	% Avoid	% Approach	% Avoid	% Approach	% Avoid	% Approach	% Avoid	% Approach	% Avoid	% Approach	% Avoid
Behavioural avoidance	94.1	5.9	94.1	5.9	94.3	5.7	88.6	11.4	75.0	25.0	93.3	6.7

Note. Recall that 'yes' responses on behavioural avoidance represent approach, while 'no' represents avoidance.

Table 11.

Correlations among Key Pre-Manipulation Variables Collapsed across Condition (Study 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) self rating of ingroup favouritism	--	.49***	.33***	.28***	.44***	.29***	na+	na+	.43***	.35***	.25***	.23***
(2) Prejudice against Blacks (MRS)		.80	.16*	.25***	.16*	.17*	-.28***	-.30***	.14*	.16*	.05	.07
(3) Ingroup's ingroup favouritism, percent			--	.76***	.67***	.52***	.27***	.13	.35***	.44***	.56***	.70***
(4) Outgroup's ingroup favouritism, percent				--	.57***	.72***	.25***	.32***	.30***	.39***	.59***	.66***
(5) Ingroup's ingroup favouritism, degree					--	.63***	.39***	.07	.40***	.40***	.50***	.55***
(6) Outgroup's ingroup favouritism, degree						--	.22**	.37***	.30***	.31***	.54***	.53***
(7) Ingroup projection index							--	.77**	-.08	.01	.21***	.27***
(8) Outgroup projection index								--	-.14*	-.04	.21**	.22**
(9) Meta-stereotype of self as individual									--	.66***	.50***	.37***
(10) Meta-stereotype of self as ingroup member										--	.44***	.40***
(11) Meta-stereotype of ingroup, degree											--	.79***
(12) Meta-stereotype of ingroup, percent												--

Note. $N = 204$. Where applicable, values in diagonal represent scale reliabilities. * $p < .05$; ** $p < .01$; *** $p < .001$. +correlations between projection indices and continuous acknowledgement of bias measure are uninterpretable as this measure was involved in the calculation of projection indices. Correlations are two-tailed.

Table 12.

Correlations among Key Post-Manipulation Variables Collapsed across Condition (Study 2)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. Contact-specific intergroup anxiety	.90	.63***	.31***	.29***	.25***	.19**	.25***	-.63***	-.53***	.33***	.03	.12	.11	.13	-.20**	-.20**	.14*	.08
2. Contact-specific outgroup avoidance (desire)		.85	.39***	.38***	.38***	.34***	.30***	-.64***	-.49***	.44***	.25***	.28***	.32***	.29***	-.11	-.20**	.27***	.19**
3. Personalized meta-stereotype of self as individual			--	.75***	.64***	.58***	.52***	-.35***	-.38***	.33***	.40***	.38***	.47***	.43***	.14*	.04	.26***	.15*
4. Personalized meta-stereotype of self as ingroup member				--	.74***	.60***	.57***	-.34***	-.32***	.36***	.45***	.44***	.50***	.49***	.14*	.06	.28***	.28***
5. Personalized meta-stereotype of ingroup, degree					--	.69***	.65***	-.40***	-.36***	.36***	.51***	.50***	.51***	.57***	.15*	.13	.28***	.28***
6. Personalized meta-stereotype of ingroup, percent						--	.68***	-.27***	-.26***	.38***	.73***	.72***	.62***	.69***	.23**	.22**	.34***	.32***
7. Personalized other-stereotype, degree							--	-.30***	-.28***	.41***	.48***	.52***	.49***	.61***	.07	.11	.31***	.32***
8. Anticipated quality of interaction, self ratings								.75	.80***	-.39***	-.14*	-.21**	-.26***	-.21**	.12	.22**	-.17*	-.10
9. Anticipated quality of interaction, partner ratings									.81	-.26***	-.11	-.18*	-.25***	-.18**	.01	.11	-.15*	-.05
10. Self rating of ingroup favouritism										--	.49***	.42***	.52***	.40***	na+	na+	.56***	.36***

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
11. Ingroup's ingroup favouritism, percent (0-100)											--	.86***	.81***	.69***	.30***	.13	.35***	.34***
12. Outgroup's ingroup favouritism, percent (0-100)												--	.69***	.80***	.26***	.26***	.32***	.28***
13. Ingroup's ingroup favouritism, degree													--	.65***	.44***	.06	.36***	.24***
14. Outgroup's ingroup favouritism, degree														--	.25***	.40***	.28***	.25***
15. Ingroup projection index															--	.73***	-.20**	-.12
16. Outgroup projection index																--	-.32***	-.13
17. General prejudice justification																	.77	.36***
18. Ingroup identification																		.80

Note. $N = 204$. Where applicable, values in diagonal represent scale reliabilities. * $p < .05$; ** $p < .01$; *** $p < .001$. +correlations between projection indices and continuous acknowledgement of bias measure are uninterpretable as this measure was involved in the calculation of projection indices. Correlations are two-tailed.

Results Testing the Replication of Study 1

The following analyses concern variables measured prior to manipulation and are thus collapsed across experimental conditions.

Projection. Consistent with Study 1 and H1a, evidence of ingroup projection of ingroup favoritism was found in Study 2. First, traditional projection analyses (using the standard social projection paradigm) demonstrated evidence of projection. Those acknowledging personal ingroup favouritism on the dichotomous measure ($n = 51$) reported a significantly higher percentage of ingroup favouring Whites ($M = 68.49$, $SD = 18.18$) than those who did not acknowledge personal ingroup favouritism ($M = 49.56$, $SD = 20.91$), $t(202) = 5.78$, $p < .001$. Replicating Study 1, this rating of White ingroup favouritism was significantly greater than the midpoint of the scale (50) among those acknowledging personal ingroup favouritism, $t(50) = 7.26$, $p < .001$, but was not significantly different from the midpoint among those who did not acknowledge personal ingroup favouritism, $t(152) = -.26$, $p = .793$. Second, more accurately depicting the projection phenomenon were the two-tailed correlations between the continuous self rating of ingroup favouritism measure (employed based on Ames' (2004b) suggestion) and White's ingroup favouritism ratings (extent and percent measures $r_s = .33$ and $.44$, respectively; see Table 11). These results indicate that greater self-rated ingroup favouritism was associated with higher ratings of White's ingroup favouritism.

Study 2 also revealed evidence of outgroup projection of ingroup favoritism (i.e., Whites who favoured their ingroup thought a large number of Blacks favoured their own ingroup). On pre-manipulation measures, Whites who acknowledged ingroup favouritism on the dichotomous measure reported a significantly greater percentage of ingroup-

favouring Blacks ($M = 77.41$, $SD = 18.62$) than those who did not acknowledge personal ingroup favouritism ($M = 60.30$, $SD = 22.70$), $t(202) = 4.86$, $p < .001$. There were also positive two-tailed correlations between continuous self-ratings of ingroup favouritism and outgroup ratings of ingroup favouritism ($r_s = .28$, $.29$; see Table 11). One difference between ingroup and outgroup projection of ingroup favouritism however, was that the ratings of Black ingroup favouritism were significantly higher than the midpoint of the scale (50) for both those acknowledging personal ingroup favouritism, and those denying personal ingroup favouritism ($ps < .001$). This was inconsistent with Study 1, but recall that here the intergroup attitude concerns favouritism and not anti-outgroup prejudice. Thus, Whites overall believed that Blacks strongly favoured their own ingroup (Blacks), however those acknowledging personal ingroup favouritism did so considerably more than those denying personal favouritism. That is, ingroup-favoring Whites exaggerated the extent to which most Blacks do the same. Because the primary interest of Study 2 is ingroup projection, this will be the focus of subsequent discussions of projection.

Meta-stereotypes. Consistent with Study 1, and in support of hypothesis H1b, Whites held a meta-stereotype that Blacks view Whites to favour their ingroup (Whites). Evidence of this can be found by examining the mean ratings of meta-stereotypes of ingroup (both percent and degree ratings; see Table 7). These mean ratings were significantly greater than the midpoint of the scale (5 for degree ratings [$t(203) = 12.73$, $p < .001$], 50 for percentage ratings [$t(203) = 14.38$, $p < .001$]). In examining differences among the different types of meta-stereotypes, t -tests revealed participants rated the meta-stereotypes of ingroup (using both the degree and percentage measures¹⁵) more

¹⁵ percentage ratings were divided by 10 in order to compare to the other meta-stereotype ratings which were measured on a 0-10 scale.

negatively than meta-stereotype of self as individual, replicating Study 1, $t(203) = 11.14$, $p < .001$; $t(203) = 11.65$, $p < .001$. Meta-stereotypes of ingroup (both degree and percentage measures) were also rated significantly more negatively than meta-stereotypes of self as ingroup member, $t(203) = 8.61$, $p < .001$; $t(203) = 10.01$, $p < .001$, respectively. Additionally, participants rated meta-stereotypes of self as ingroup member more negatively than meta-stereotypes of self as individual, $t(203) = 2.77$, $p = .006$. Thus, participants expected that Blacks would view them more positively as individuals than as members of their ingroup. This analysis in particular is unique to the current study. Despite these mean differences, all types of meta-stereotype ratings were significantly correlated (see Table 11).

Relation between projection and meta-stereotypes. To test the hypothesis that ingroup favouritism meta-stereotypes of ingroup were formed via ingroup and outgroup projection of ingroup favouritism, analyses similar to those performed in Study 1 were conducted. However, because Study 2 involved two types of measures of meta-stereotypes of ingroup (a percentage measure and a degree measure), two models were tested. The first model tested whether self-rated ingroup favouritism predicted meta-stereotype of ingroup percentage ratings through perceived ingroup's (White's) and outgroup's (Black's) ingroup favouritism percentage ratings, whereas the second tested whether self-rated ingroup favouritism predicted meta-stereotype of ingroup degree ratings through ingroup and outgroup ingroup favouritism degree ratings (see Figures 4a and 4b). All correlations relevant to both models were significant (see Table 11), indicating preliminary support for the models. Each model was then tested in a path model using Amos 16.0 software. Again, bootstrapping procedures were employed.

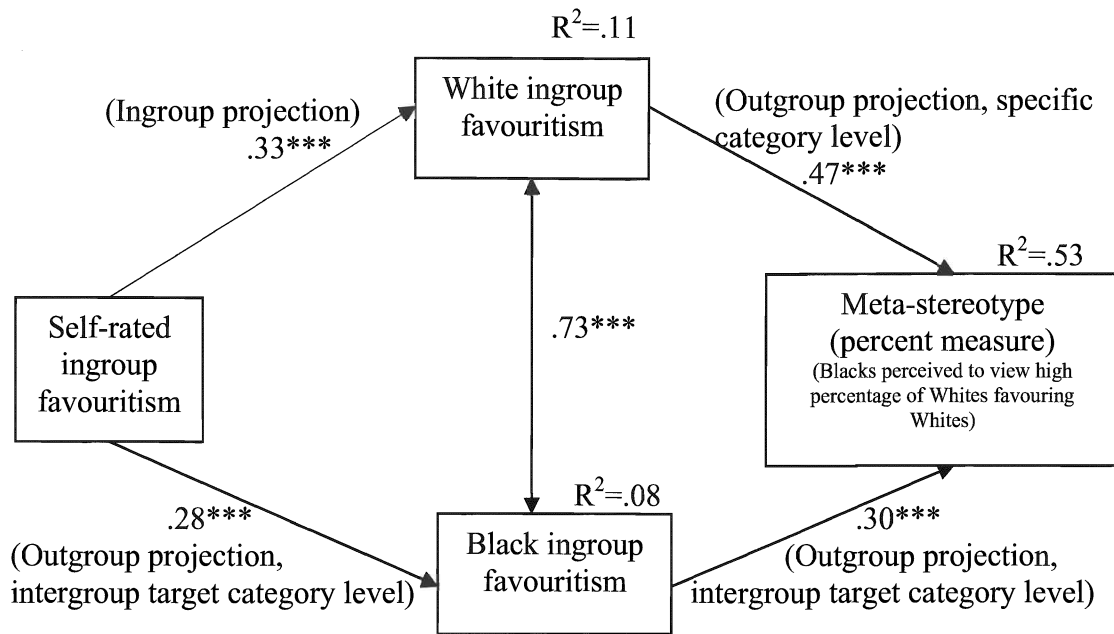


Figure 4a. Results of path model testing the hypothesized relation between meta-stereotypes of ingroup (percent measure) and the projection of intergroup attitudes. $*** p < .01$. Path coefficients are standardized.

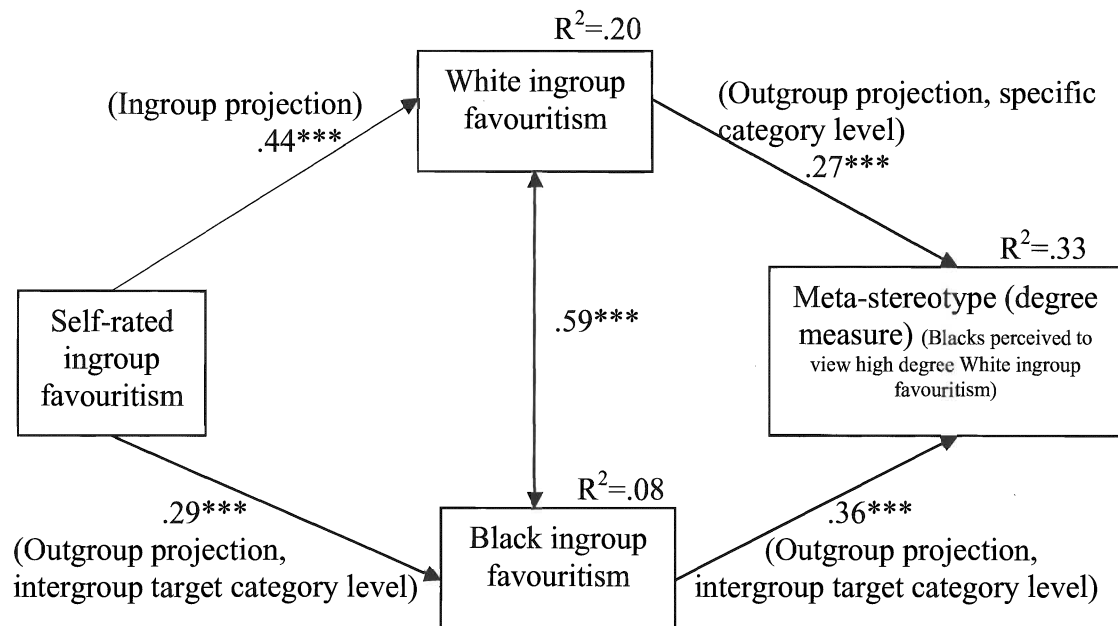


Figure 4b. Results of path model testing the hypothesized relation between meta-stereotypes of ingroup (degree measure) and the projection of intergroup attitudes. $*** p < .01$. Path coefficients are standardized.

Both models demonstrated good fit, $\chi^2(1) = .039, p = .884$, RMSEA = .000, CFI = 1.00, and SRMR = .003 (percentage measures), and $\chi^2(1) = .200, p = .654$, RMSEA = .000, CFI = 1.00, and SRMR = .007 (degree measures) according to established fit criteria. Also, including a direct path from self-rated ingroup favouritism to meta-stereotype in each model resulted in a non-significant path, $\beta = -.01, p = .873$ (percentage measures), $\beta = .03, p = .727$ (degree measures), illustrating full mediation. Thus, results were consistent with expectations, and replicated Study 1.

Alternative models similar to those tested in Study 1 were performed to rule out the possibility that introjection contributes to the formation of meta-stereotypes rather than projection. Both of these models demonstrated poor fit to the data: $\chi^2(2) = 140.99, p < .001$, RMSEA = .585, CFI = .594, and SRMR = .271 (percentage measures), and $\chi^2(2) = 69.11, p < .001$, RMSEA = .407, CFI = .703, and SRMR = .192 (degree measures). This illustrated that in the context of explaining ingroup favouritism meta-stereotypes, self-to-group 'projection' provides a better fit to the data than group-to-self 'introjection', replicating Study 1.

Following these analyses, for exploratory purposes, the hypothesized model was tested with meta-stereotypes of self as ingroup member as the dependent variable. This perception is highly group-relevant, and possibly formed through ingroup and outgroup projection as well, unlike meta-stereotypes of self as individual. Thus, it was tested whether self-rated ingroup favouritism predicted meta-stereotypes of self as ingroup member through ingroup's and outgroup's ingroup favouritism ratings. Degree measures of group ingroup favouritism ratings were used, given that meta-stereotype of self as ingroup member was measured on this scale. All model paths were significant ($p < .001$),

with the exception of the path from outgroup's (Black's) ingroup favouritism rating to meta-stereotype of self as ingroup member. The model did not fit well, $\chi^2(1) = 9.39$, $p = .002$, RMSEA = .203, CFI = .956, and SRMR = .054, however. Meta-stereotypes of ingroup then, are likely formed through ingroup projection and outgroup projection at the level of specific category only (i.e., only paths 1 and 2 of Figure 1).

Manipulation Check

Of the participants who reported receiving information corresponding to one of the experimental conditions, the following percentages of participants chose the option referring to the correct condition: 93% Personal Self-Stereotype condition, 79% in the Group Self-Stereotype condition, 71% in the Personal Other-Stereotype condition, 38% of participants in the Group Other-Stereotype condition, 62% in the Personal Meta-Stereotype condition, and 50% of participants in the Group Meta-Stereotype condition.

As stated above, the manipulation check was reserved until the end of the study to avoid influencing the key dependent measures (see also Blanton et al., 2001). Note also that several of the choices from the options list were quite similar (e.g., the options referring to the Personal Other-Stereotype and Group Other-Stereotype conditions, see Appendix C.21), which may have led to confusion at this late point in the study. Perhaps percentages of participants choosing the response corresponding to the correct condition would be higher were it not for these issues. Regardless, based on the results, the fact that participants could not continue to the next section of the study without pauses at the screens involving the manipulation messages, and visual examination of open-ended suspicion check measures of the study, it was deemed reasonable to assume that participants included in the analyses were aware of the manipulation information.

Projection

The following tests examine the validity of Hypotheses 2a and 2b.

Post-manipulation projection correlations within experimental condition. Recall that ingroup projection of ingroup favouritism is represented by the correlation between self ratings of ingroup favouritism (continuous measure), and ingroup ratings of ingroup favouritism (degree measure).¹⁶ These correlations were examined within experimental conditions, to determine if the correlations were stronger in any condition(s) (see Table 13). To remove the potential influence of chance pre-manipulation projection differences, post-manipulation projection correlations were examined controlling for pre-manipulation projection (using the pre-manipulation projection index). This partial correlation was very strong in the Personal Self-Stereotype condition ($r = .80$), illustrating strong projection under self-concept threat, as expected. Although z -tests conducted using the statistical package *Corpack* (MacIntyre & MacMaster, 2000) revealed that in the Personal Self-Stereotype condition this correlation did not differ significantly from those in the Personal or Group Meta-Stereotype conditions, it did differ significantly from the other three conditions. This cannot be said for the two aforementioned Meta-Stereotype conditions. Thus, participants in the Personal Self-Stereotype, Personal Meta-Stereotype, and Group Meta-Stereotype conditions demonstrated the strongest post-manipulation projection correlations, with the correlation in the Personal Self-Stereotype condition standing out as quite strong. Although the focus of this study was ingroup projection of ingroup favouritism, Table 13 presents within

¹⁶ Both the correlation between self-rated ingroup favouritism and ingroup ratings of ingroup favouritism (percent) and the correlation between self-rated ingroup favouritism and ingroup ratings of ingroup favouritism (degree) provide evidence of projection, but these analyses will focus on the correlation between self-rated ingroup favouritism and degree ratings, simply because both are on a 0-10 "extent" rating scale. Correlations between self-rated ingroup favouritism and percent ratings are quite similar.

Table 13.

Post-Manipulation Projection Partial Correlations (correlations between self-rated ingroup favouritism and ratings of ingroup's ingroup favouritism [degree]) within Experimental Condition, Controlling for Pre-Manipulation Projection (Study 2)

Condition	Ingroup projection correlation	Outgroup projection correlation
Personal Self-Stereotype	.80*** _a	.62*** _{ab}
Group Self-Stereotype	.36* _b	.32 ⁺ _a
Personal Other-Stereotype	.56** _b	.39* _a
Group Other-Stereotype	.49** _b	.41* _a
Personal Meta-Stereotype	.65*** _{ab}	.72*** _b
Group Meta-Stereotype	.64*** _{ab}	.74*** _b

Note. + $p = .06$ * $p < .05$; ** $p < .01$; *** $p < .001$. Within columns, correlations sharing an alphabet subscript do not differ significantly; correlations that do not share a subscript differ significantly from one another at $p < .05$ using z-tests derived from the Corpack statistical package (MacIntyre & MacMaster, 2000). Correlations are two-tailed.

condition outgroup projection correlations for interest. The pattern of the outgroup projection correlations appears similar, save that in the Personal Self-Stereotype condition the outgroup projection correlation was not as prominent as the ingroup projection correlation. Future research can examine why this difference may exist.

Differences in projection scores from pre- to post- manipulation. As an alternative way to investigate projection strength as a function of experimental condition, an examination of whether projection of ingroup favouritism *became* stronger in certain experimental conditions was conducted. To do so, means of the projection score index were compared between the pre- and post-manipulation phase. This was to examine whether participants in certain conditions might project ingroup favouritism more or less after receiving manipulation feedback. Paired *t* tests revealed that only in the Personal Self-Stereotype condition (i.e., participant informed of personal biases, thus under self-concept threat) did projection become significantly stronger from the pre- to post-manipulation phase (see Table 14).

Upon establishing this mean difference, it was necessary to “unpack” this effect to examine what component(s) of the projection index changed based on the manipulation. To do so, means of the variables composing the projection index (self-ratings of ingroup favouritism and ingroup ratings of ingroup favoritism [degree]) were compared between the pre- and post-manipulation phase in the key (Personal Self-Stereotype) condition to determine which ratings became higher or lower leading to greater congruency between self and ingroup ratings of ingroup favouritism. Figure 5 illustrates that, in the Personal-Self Stereotype condition, ingroup ratings of ingroup favouritism decreased significantly

Table 14.

Mean Differences in Projection Index from Pre- to Post-Manipulation, within Experimental Condition (Study 2)

Condition	Pre-manipulation ingroup projection index mean (standard deviation)	Post-manipulation ingroup projection index mean (standard deviation)	Paired t-test
Personal Self-Stereotype	31.47 (24.63)	22.79 (18.60)	$t(33) = 2.50, p = .018$
Group Self-Stereotype	40.88 (25.86)	36.11 (26.14)	$t(33) = .80, p = .430$
Personal Other-Stereotype	31.71 (20.22)	27.85 (20.75)	$t(34) = 1.11, p = .273$
Group Other-Stereotype	36.57 (22.61)	35.54 (20.67)	$t(34) = .23, p = .822$
Personal Meta-Stereotype	30.55 (22.16)	25.41 (23.60)	$t(35) = 1.64, p = .110$
Group Meta-Stereotype	30.55 (25.04)	27.83 (21.71)	$t(29) = .56, p = .581$

Note. * $p < .05$. Lower scores on the projection index indicate stronger projection (i.e., more congruency between self and consensus ingroup favouritism ratings).

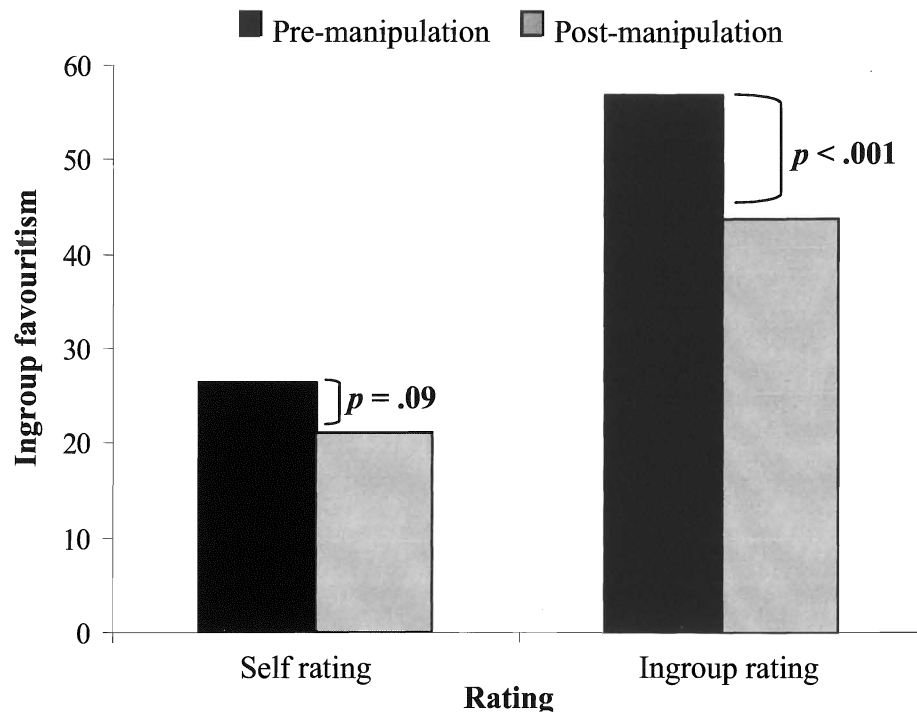


Figure 5. Differences in self and ingroup's ingroup favouritism ratings from pre- to post-manipulation in the Personal Self-Stereotype condition (Study 2).

(based on *t*-tests) from the pre- to post-manipulation phase, and that self ratings of ingroup favouritism decreased marginally ($p = .09$). Thus, in the Personal Self-Stereotype condition, both self and ingroup consensus ratings of ingroup favouritism were lowered (either significantly or marginally), explaining the pattern beneath the strong self-group congruency (i.e., projection).

Post-manipulation projection comparisons examining potential theoretical models. The final and key analyses conducted regarding projection within experimental conditions were those to examine which of the previously outlined theoretical models (see Table 5) were supported by the data. Results presented thus far have suggested that the strongest projection occurred in the Personal Self-Stereotype condition, which would provide evidence for the *Perceptual cognitive overgeneralization* and *Motivated threat* models (recall that both of these models predicted the strongest projection in this condition). Specific analyses were conducted to test all of the models, beginning with the *Perceptual cognitive overgeneralization* and *Motivated threat* models (which predict very similar outcomes, differing in magnitude).

Prior to testing theoretical models however, an exploratory analysis was conducted to determine whether any one condition had a significant impact on the dependent variable relative to the grand mean. To do so, a hierarchical regression analysis was executed. Pre-manipulation projection (index score) was entered on Step 1 to remove variance accounted for by chance pre-manipulation projection differences, and five effect coded predictors representing the experimental conditions (see Appendix D, p.211, effect coding scheme) were entered on Step 2. Effect coding schemes are employed to explore whether the outcomes of a specific group differ from the average

outcome of the sample (Cohen, Cohen, West, & Aiken, 2003, p.320). These effect coded predictors compared each condition's post manipulation projection score to the (unweighted) grand mean post-manipulation projection score of the sample. The model overall was significant, $R^2 = .19$, $F(6, 197) = 7.64$, $p < .001$, with 19% of the variability in post-manipulation projection accounted for by the model. Only one of the coded predictors, predictor E1, representing the effect of the Personal Self-Stereotype condition, (see Table 15) was marginally significant ($\beta = -.15$, $p = .077$), while all other predictors were not significant. This provided evidence, albeit marginal, of stronger projection in the Personal Self-Stereotype condition as compared to the projection grand mean.

To test whether the *Perceptual cognitive overgeneralization* or *Motivated threat* models were supported, a hierarchical regression analysis was conducted. Post-manipulation projection was the criterion, and pre-manipulation projection was entered on step 1, again to remove variance accounted for by chance pre-manipulation projection differences. An orthogonal contrast coding scheme was composed to make the comparisons necessary to determine whether these models were supported (see Appendix E, p.213, contrast coding scheme 1).¹⁷ Orthogonal contrasts compare conditions or groups of conditions with other conditions or other groups of conditions and are recommended as a clear and powerful way to test precise hypotheses (Rosenthal, Rosnow, & Rubin, 2000). These coded predictors were entered on step 2.

The main interest of this analysis was to determine whether there was stronger projection in the Personal Self-Stereotype and Personal Meta-Stereotype conditions compared to the other conditions. The predictor representing this comparison (C1a in

¹⁷ Performing 2 regression analyses with the same predictor variable coded 2 different ways can inflate Type I error. Thus, these and subsequent results should be interpreted with this in mind.

Table 15.

Regression Analyses: Condition (using coded predictors) Predicting Post-manipulation Projection (Study 2)

Model tested	Criterion	Predictor	β	B	SE	<i>t</i>	<i>p</i>
Exploratory, not testing model(s)	Post manipulation projection index	E1	-.15	-5.69	3.20	-1.77	.077
		E2	.11	4.25	3.23	1.32	.190
		E3	.14	5.23	3.17	1.65	.100
		E4	-.07	-2.73	3.13	-.87	.384
		E5	-.01	-.35	3.37	-.11	.916
Perceptual cognitive overgeneralization/ Motivated threat models	Post manipulation projection index	C1a	.13	2.10	1.01	2.08	.038
		C1b	-.04	-1.48	2.44	-.60	.547
		C1c	.01	.16	1.77	.09	.930
		C1d	-.08	-2.97	2.45	-1.21	.226
		C1e	.06	2.30	2.58	.89	.372
Introjection model	Post manipulation projection index	C2a	-.06	-.97	1.03	-.94	.346
		C2b	-.06	-2.30	2.58	-.89	.372
		C2c	.12	3.23	1.73	1.87	.063
		C2d	-.08	-2.97	2.45	-1.21	.226
		C2e	.04	1.48	2.44	.60	.547
Normative influence model	Post manipulation projection index	C3a	-.07	-1.13	1.00	-1.12	.262
		C3b	-.08	-2.97	2.45	-1.21	.226
		C3c	.01	.41	1.78	.23	.816
		C3d	-.13	-4.97	2.49	-1.99	.048
		C3e	-.03	-1.19	2.53	-.47	.639

Appendix E) was significant, ($\beta = .13, p = .038$); there was stronger projection in these 2 conditions than in the others, in support of the *Perceptual cognitive overgeneralization* and *Motivated threat* models. Further, the predictor representing the comparison between the Personal Self-Stereotype condition and Personal Meta-Stereotype condition (C1b in Appendix E) was not significant ($\beta = -.04, p = .547$) indicating that projection was equally strong in each of these conditions (see Table 15). Significance of the remaining contrasts in this analysis is not discussed here; these predictors were simply included to maintain orthogonality and were not of interest nor theoretically meaningful for these projection analyses. Overall, this analysis indicates direct evidence in support of the *Perceptual cognitive overgeneralization* and *Motivated threat* models.

To test whether the *Introjection (Informational influence)* model was supported, a regression analysis similar to the one conducted to test the *Perceptual cognitive overgeneralization* and *Motivated threat* models was performed, using an orthogonal coding scheme that would make the comparisons necessary to provide support for this model (see Appendix E, p.215, contrast coding scheme 2). The contrast that was required to be significant to provide support of the *Introjection* model was C2a (see Appendix E), which compared post manipulation projection in the Group Self-Stereotype and Group Meta-Stereotype conditions to the other conditions. This contrast was not significant ($\beta = -.06, p = .346$), thus failing to support the *Introjection* model (see Table 15). Significance of the remaining contrasts is not discussed here as these contrasts were simply included to maintain orthogonality, and were not of interest or theoretically meaningful.

To test whether the *Normative influence* model was supported, a regression analysis akin to those performed above using contrast coding, but using contrasts specific

to the model comparisons necessary (see Appendix E, p.217, contrast coding scheme 3) was employed. The key contrast testing support for the *Normative influence* model was C3a, which compared post-manipulation projection in both Self-Stereotype and both Meta-Stereotype conditions to post-manipulation projection in both Other-Stereotype conditions. This predictor was not significant ($\beta = -.07, p = .262$), indicating a lack of support for the *Normative influence* model (see Table 15). Significance of the remaining contrasts is not discussed here as these contrasts were simply included to maintain orthogonality, and were not of interest or theoretically meaningful.

The Self-as-sample model, which predicted equal projection in all conditions, would be supported if there were no differences in post-manipulation projection among experimental conditions, given that this model holds that projection is not impacted by the manipulations. As the above results have shown (e.g., support provided for the *Perceptual cognitive overgeneralization* and *Motivated threat* models), this is not the case, thus the *Self as sample* model is not supported.

Overall, only the *Perceptual cognitive overgeneralization* and *Motivated threat* models were supported. As the discussion will address, the *Motivated threat* model is believed to stand out as most strongly supported, supporting the hypothesis that *ingroup projection of ingroup favouritism takes the form of self-to-group projection as a self-concept threat-based reaction*. In other words, upon receiving information that is threatening to the self-concept, people project their intergroup attitudes onto the ingroup.

Summary of experimental projection results. To summarize, the results of the experimental projection analyses provide evidence in support of Hypotheses 2a and 2b. Providing evidence in support of Hypotheses 2a were results showing that: (a) projection

correlations were very strong in the most self-threatening condition (Personal Self-Stereotype, “you favour Whites”), and also quite strong in the somewhat less self-threatening condition (Personal Meta-Stereotype, “your partner views you to favour Whites”); (b) projection only became stronger upon receiving manipulation feedback in the Personal Self-Stereotype condition; and (c) the Personal Self-Stereotype and Personal Meta-Stereotype conditions (the two most self-threatening conditions) produced the strongest post-manipulation projection index scores compared to all other conditions. Thus, self-group congruence (projection) was the strongest in both the Personal Self-Stereotype and Personal Meta-Stereotype conditions, supporting H2a. There was no support for the *Introjection* theoretical model, supporting H2b. Thus, it appears that in this contact setting, self-group congruence was more consistent with self to group projection, than group to self introjection.

Anticipated Intergroup Contact Reactions

In the post-manipulation measurement phase, participants responded to questions regarding their thoughts, feelings, and expectations about an apparent upcoming interaction with a Black partner. Several analyses were conducted to test the theoretical models (see Table 6), with the intention of deducing which types of perceptions are most damaging to intergroup contact. In all cases, prior to testing theoretical models, an exploratory analysis was conducted to determine whether any one condition had a significant impact on the dependent variable relative to the grand mean. This preliminary analysis regressed each dependent variable on condition, with 5 effect coded predictors representing condition (see Appendix D). The analysis testing the theoretical models regressed each dependent variable on condition, with 5 orthogonal contrast coded

predictors representing condition (see Appendix E, p. 219, contrast coding scheme 4). The key contrasts for these anticipated intergroup contact analyses were: (a) C4c, which compared the Other-Stereotype (both types) conditions to the Meta-stereotype (both types) conditions, testing both the *Meta-stereotypes dominant* (Model X) and *Other-stereotypes dominant* models (Model Z); and (b) C4a, which compared the Other-Stereotype (both types) and Meta-Stereotype (both types) conditions to the Self-Stereotype conditions, testing *Meta- and other-stereotypes equally dominant* model (Model Y). Unlike tests of the projection models, here these contrasts could be included in the same regression model because conditions for orthogonality (see Cohen et al., 2003, p.315) could be met within a single analysis, which was not the case for the projection models. Another advantage of this coding scheme was that it allowed for the exploratory investigation of differences in the dependent variables between the Personal and Group Self-Stereotype manipulations (C4b), Personal and Group Other-Stereotype manipulations (C4d), and the Personal and Group Meta-Stereotype manipulations (C4e). Although such differences were not expected, the coding scheme allowed for the examination of this possibility.

Contact-specific intergroup anxiety. The omnibus F of the regression analyses predicting contact-specific intergroup anxiety reached marginal significance, $R^2 = .05$, $F(5, 198) = 2.25$, $p = .051$. The exploratory analysis regressing contact-specific intergroup anxiety on condition, with 5 effect coded predictors representing condition (see Appendix D) revealed that predictor E2 was significant, and predictor E4 was marginal (see Table 16). This indicated that there was significantly less intergroup anxiety in the Group Self-Stereotype condition relative to the intergroup anxiety grand

mean, and marginally more intergroup anxiety in the Personal Meta-Stereotype condition relative to the intergroup anxiety grand mean, respectively.

The next analysis, testing the anticipated intergroup contact reaction theoretical models, regressed contact-specific intergroup anxiety on condition, with 5 orthogonal contrast coded predictors representing condition (see Appendix E, contrast coding scheme 4). As revealed in Table 16, the C4a contrast was significant ($\beta = .21, p = .003$), supporting the *Meta- and other-stereotypes equally dominant* theoretical model. Thus, there was more intergroup anxiety in the Meta-(both types) and Other-(both types) Stereotype conditions than in the Self-Stereotype (both types) conditions. The C4c contrast was not significant ($\beta = -.02, p = .739$), demonstrating a lack of support for the *Meta-stereotypes dominant* and *Other-stereotypes dominant* models, thus indicating that there was no significant difference between intergroup anxiety in the Other-Stereotype versus Meta-Stereotype conditions. Thus, the negative impact of Meta- and Other-Stereotype manipulations on intergroup anxiety in this context appeared to be equal, in contrast to assertions by Vorauer et al. (1998).

Anticipated quality of interaction. Regarding self-ratings of anticipated quality of interaction, the omnibus regression analysis was significant, $R^2 = .08, F(5, 198) = 3.53, p = .004$. The exploratory analysis that regressed self-ratings of anticipated quality of interaction on condition, represented by effect coded predictors (see Appendix D), showed that only the E1 predictor was significant (see Table 16). This indicated that anticipated quality of interaction ratings were significantly more positive in the Personal Self-Stereotype condition compared to the anticipated interaction quality grand mean.

Table 16.

Regression Analyses: Condition (using coding predictors) Predicting Contact-Specific Intergroup Anxiety and Anticipated Quality of Interaction Ratings (Study 2)

Criterion	Predictor	β	B	SE	<i>t</i>	<i>p</i>
Contact-specific Intergroup Anxiety	E1	-.10	-.19	.17	-1.13	.258
	E2	-.24	-.45	.17	-2.65	.009
	E3	.02	.05	.17	.32	.752
	E4	.16	.30	.17	1.83	.069
	E5	.04	.08	.18	.45	.656
Contact-specific Intergroup Anxiety	C4a	.21	.16	.05	2.99	.003
	C4b	.07	.13	.13	.99	.329
	C4c	-.02	-.03	.09	-.33	.739
	C4d	.04	.07	.13	.59	.556
	C4e	.06	.11	.13	.84	.404
Anticipated quality of interaction (self perceptions)	E1	.32	.93	.26	3.60	<.001
	E2	.07	.22	.26	.84	.399
	E3	-.01	-.04	.26	-.15	.878
	E4	-.08	-.23	.25	-.90	.370
	E5	-.09	-.28	.27	-1.05	.297
Anticipated quality of interaction (self perceptions)	C4a	-.24	-.29	.08	-3.52	.001
	C4b	.12	.36	.20	1.78	.076
	C4c	-.01	-.03	.14	-.22	.823
	C4d	-.10	-.28	.20	-1.42	.157
	C4e	.01	.03	.20	.14	.889
Anticipated quality of interaction (partner perceptions)	E1	.27	.91	.30	3.03	.003
	E2	.11	.39	.30	1.29	.198
	E3	-.01	-.02	.30	-.07	.943
	E4	-.14	-.48	.29	-1.64	.102
	E5	-.07	-.24	.31	-.75	.453
Anticipated quality of interaction (partner perceptions)	C4a	-.23	-.32	.09	-3.41	.001
	C4b	.08	.26	.23	1.12	.264
	C4c	.01	.04	.16	.22	.828
	C4d	-.08	-.27	.23	-1.16	.245
	C4e	-.04	-.12	.24	-.52	.606

When orthogonal contrast predictors representing condition were examined, contrast C4a was significant ($\beta = -.24, p < .001$), supporting the *Meta- and other-stereotypes equally dominant* model, thus indicating that the anticipated interaction quality was significantly more negative in the Other- and Meta-Stereotype conditions than the Self-Stereotype conditions. The C4c contrast was not significant ($\beta = -.01, p = .157$), providing a lack of support for both the *Meta-stereotypes dominant* and *Other-stereotypes dominant* models, thus indicating that the negative impact of the Meta- and Other-Stereotype manipulations on anticipated interaction quality in this context was equal. Also, the C4b contrast was marginally significant, indicating that anticipated interaction quality in the Personal Self-Stereotype condition was marginally more positive than in the Group Self-Stereotype condition.

With anticipated partner ratings of anticipated interaction quality as the criterion, the omnibus analysis was significant, $R^2 = .07, F(5, 198) = 2.94, p = .014$. As revealed in Table 16, the pattern for these analyses was identical to that presented above, with the one exception that the C4b predictor was not significant in this case.

Personalized meta-stereotypes. The pattern of results was quite similar for each type of personalized meta-stereotype (i.e., ingroup, self as individual, and self as ingroup member), so these results will be presented together. When the criterion was personalized meta-stereotype of self as ingroup member, $R^2 = .06, F(5, 198) = 2.33, p = .044$, personalized meta-stereotype of ingroup (degree), $R^2 = .11, F(5, 198) = 4.93, p < .001$, or personalized meta-stereotype of ingroup (percent), $R^2 = .14, F(5, 198) = 6.39, p < .001$, the omnibus analysis was significant, but when the criterion was personalized meta-stereotype of self as individual, $R^2 = .04, F(5, 198) = 1.65, p = .148$, the omnibus analysis

was not significant. Regarding exploratory analyses where effect coded predictors represented condition, predictor E1 was significant in all cases, indicating that meta-stereotypes were rated most positively in the Personal Self-Stereotype condition relative to each grand mean (see Table 17).

Table 17 also illustrates that for all of the analyses where orthogonal contrasts represented condition, C4a was significant, supporting the *Meta- and other-stereotypes equally dominant model*, and indicating that personalized meta-stereotypes were more negative in the Other- and Meta-Stereotype conditions compared to the Self-Stereotype conditions. In all cases the C4c contrast was not significant, showing a lack of support for both the *Meta-stereotypes dominant* and *Other-stereotypes dominant* models, and indicating that the negative impact of Other- and Meta-Stereotype manipulations on meta-stereotype ratings was equal, contrary to suggestion by Vorauer et al. (1998). Additionally, in all cases (with the exception of when personalized meta-stereotype of self as individual was the criterion), the C4b contrast indicated that meta-stereotypes were either significantly or marginally more positive in the Personal Self-Stereotype condition compared to the Group Self-Stereotype condition.

Thus, in terms of ingroup favouritism, White participants thought themselves or their group would be viewed most negatively by an outgroup member in the Other- and Meta-Stereotype conditions (representing negative concern with intergroup contact), and most positively in the Personal Self-Stereotype condition (possibly representing a denial or non-prejudiced response). Additional marginal differences can be viewed in Table 17.

Contact-specific outgroup avoidance. For regression analyses predicting the desire to avoid the upcoming contact with an outgroup member, the omnibus analysis

Table 17.

Regression Analyses: Condition (using coding predictors) Predicting Personalized Meta-Stereotypes (Study 2)

Criterion	Predictor	β	B	SE	<i>t</i>	<i>p</i>
Personalized meta-stereotype of self as individual	E1	-.23	-1.28	.50	-2.57	.011
	E2	-.03	-.19	.50	-.38	.706
	E3	.11	.63	.49	1.28	.203
	E4	-.01	-.02	.49	-.04	.968
	E5	.06	.34	.52	.65	.514
Personalized meta-stereotype of self as individual	C4a	.16	.37	.16	2.33	.021
	C4b	-.10	-.54	.38	-1.41	.159
	C4c	.05	.20	.27	.75	.454
	C4d	-.01	-.06	.38	-.15	.880
	C4e	-.03	-.18	.39	-.46	.646
Personalized meta-stereotype of self as ingroup member	E1	-.26	-1.83	.47	-2.94	.004
	E2	.02	.12	.47	.249	.804
	E3	.16	.86	.46	1.84	.067
	E4	-.07	-.36	.46	-.79	.433
	E5	.07	.40	.49	.80	.421
Personalized meta-stereotype of self as ingroup member	C4a	.15	.32	.15	2.21	.035
	C4b	-.14	-.75	.36	-2.05	.041
	C4c	.08	.30	.26	1.15	.251
	C4d	-.05	-.24	.36	-.67	.500
	C4e	-.07	-.38	.37	-1.02	.307
Personalized meta-stereotype of ingroup, extent	E1	-.36	-1.76	.43	-4.10	<.001
	E2	-.11	-.52	.43	-1.22	.225
	E3	.10	.50	.42	1.19	.235
	E4	-.03	-.14	.42	-.33	.738
	E5	.17	.87	.45	1.92	.056
Personalized meta-stereotype of ingroup, extent	C4a	.28	.57	.14	4.20	<.001
	C4b	-.12	-.62	.33	-1.86	.064
	C4c	.06	.21	.23	.88	.381
	C4d	.06	.27	.33	.83	.407
	C4e	-.10	-.50	.34	-1.49	.138
Personalized meta-stereotype of ingroup, percent	E1	-.40	-16.92	3.60	-4.70	<.001
	E2	-.09	-3.86	3.60	-1.07	.284
	E3	.08	3.41	3.55	.96	.339
	E4	-.04	-1.74	3.51	-.50	.620
	E5	.20	8.62	3.78	2.28	.024
Personalized meta-stereotype of ingroup, percent	C4a	.30	5.20	1.14	4.57	<.001
	C4b	-.15	-6.53	2.78	-2.34	.020
	C4c	.06	1.76	1.97	.89	.373
	C4d	.08	3.55	2.74	1.29	.198
	C4e	-.12	-5.18	2.84	-1.82	.070

was not significant, $R^2 = .04$, $F(5, 198) = 1.45$, $p = .205$. Regarding the preliminary exploratory analysis, predictor E1 was significant (see Table 18), indicating that the desire to avoid the partner was lowest in the Personal Self-Stereotype condition, relative to the desire to avoid grand mean.

In the analysis testing the theoretical models, Table 18 shows that contrast C4a was significant supporting the *Meta- and other-stereotypes equally dominant* model, and indicating that the desire to avoid the interaction was highest in the Other- and Meta-Stereotype conditions compared to the Self-Stereotype conditions. Also, contrast C4c was not significant, demonstrating a lack of support for both the *Meta-stereotypes dominant* and *Other-stereotypes dominant* models, and indicating that the desire to avoid the interaction was equal in the Other- and Meta-Stereotypes conditions, again inconsistent with Vorauer et al.'s (1998) prediction.

Regarding the dichotomous measure of behavioural avoidance choice, the omnibus analysis was significant, $R^2 = .05$, $F(5, 198) = 2.28$, $p = .048$. In the exploratory analysis, the E4 predictor was significant (see Table 18), indicating that there was significantly more behavioural avoidance (as compared to behavioural approach) in the Personal Meta-Stereotype condition relative to the grand mean. Regarding the model testing regression, only contrast C4e was significant, indicating that there was significantly more behavioural avoidance in the Personal Meta-stereotype condition than in the Group Meta-Stereotype condition. The results of these two analyses combined do not show perfect support for any of the theoretical models, but provide partial support for the Meta-Stereotypes dominant model, consistent with Vorauer et al. (1998). Thus, it appears Meta- and Other-Stereotype manipulations strongly and equally influence the

Table 18.

Regression Analyses: Condition (using coding predictors) Predicting Contact-Specific Outgroup Avoidance (Study 2)

Criterion	Predictor	β	B	SE	<i>t</i>	<i>p</i>
Contact-specific-outgroup avoidance (desire to avoid)	E1	-.19	-.86	.41	-2.11	.036
	E2	-.08	-.37	.41	-.91	.362
	E3	-.01	-.02	.40	-.06	.952
	E4	.09	.39	.40	.97	.331
	E5	.06	.29	.43	.68	.499
Contact-specific-outgroup avoidance (desire to avoid)	C4a	.17	.31	.13	2.39	.018
	C4b	-.05	-.24	.31	-.77	.442
	C4c	-.01	-.03	.22	-.14	.888
	C4d	.07	.30	.31	.97	.335
	C4e	.01	.05	.32	.15	.880
Behavioural Avoidance (actual choice to avoid)	E1	.08	.04	.05	.90	.371
	E2	.08	.04	.05	.90	.371
	E3	-.03	-.01	.05	-.29	.774
	E4	-.29	-.15	.05	-3.25	.001
	E5	.06	.03	.05	.69	.488
Behavioural Avoidance (actual choice to avoid)	C4a	-.09	-.02	.01	-1.42	.158
	C4b	.00	.00	.04	.00	1.000
	C4c	.10	.04	.03	1.41	.161
	C4d	.05	.03	.04	.80	.426
	C4e	-.17	-.09	.04	-2.47	.014

desire to avoid an intergroup interaction (see first set of analyses above), but actual behavioural avoidance (dichotomous measure) is most strongly influenced by Personal Meta-Stereotype manipulation.

Summary of anticipated intergroup contact reaction results. Overall, the *Meta- and other-stereotypes equally dominant* model was supported. Other- and Meta-Stereotype manipulations (Personal and Group) exerted the most negative impact on the upcoming intergroup interaction. This diverges from the *Meta-stereotypes dominant* model, which was expected to be supported (Hypothesis 3, based on predictions by Vorauer et al., 1998). Also, the Personal Self-Stereotype manipulation (“you favour Whites”) actually exerted a *positive* impact on expectations regarding an intergroup contact experience. This is much more interesting than expectations regarding this condition (neutral anticipated intergroup contact reactions), and will be addressed in detail in the discussion section.

Exploratory Analyses

Two analyses were conducted to test whether participants in certain conditions might exhibit stronger prejudice justification and/or ingroup identification.

General prejudice justification. To examine whether prejudice justification was stronger in any single condition, a regression analysis was performed with general prejudice justification predicted by condition represented by effect-coded predictors. The omnibus analysis was not significant, $R^2 = .03$, $F(5, 198) = 1.07$, $p = .377$. As Table 19 shows, only predictor E1 approached significance: participants in the Personal Self-Stereotype condition viewed prejudice against Blacks as marginally less justified relative to the grand mean.

Ingroup identification. To examine whether ingroup identification was stronger in any single condition, a regression analyses was performed with ingroup identification predicted by condition, again represented by effect coded predictors only (given that specific hypotheses were not specified regarding ingroup identification). Similar to prejudice justification results, the omnibus analysis was not significant, $R^2 = .02$, $F(5, 198) = .82$, $p = .537$. Only predictor E1 approached significance, with participants in the Personal Self-Stereotype condition identifying with the ingroup marginally *less*, compared to the grand mean ($p = .056$, see Table 19).

Table 19.

Regression Analyses: Condition (using effect coded predictors) Predicting General Prejudice Justification and Ingroup Identification (Study 2)

Criterion	Predictor	β	B	SE	<i>t</i>	<i>p</i>
General Prejudice Justification	E1	-.16	-.26	.14	-1.77	.079
	E2	.05	.07	.14	.50	.616
	E3	.01	.01	.14	.07	.946
	E4	.11	.17	.14	1.22	.223
	E5	-.08	-.13	.15	-.85	.394
Ingroup Identification	E1	-.18	-.67	.35	-1.92	.056
	E2	.02	.07	.35	.20	.844
	E3	.03	.12	.34	.34	.732
	E4	.07	.26	.34	.76	.451
	E5	-.01	-.02	.37	-.05	.962

Discussion

Although focusing on a different form of prejudice, Study 2 successfully replicated the key findings of Study 1. More importantly, Study 2 introduced experimental manipulations and an anticipated intergroup contact paradigm, allowing interesting and novel findings about the social projection of intergroup attitudes and negative meta-stereotypes about intergroup attitudes. The results of this study will add to several literatures, providing useful directions for future research.

The results of Study 2 first provided evidence of the projection of ingroup favouritism, and Whites' meta-stereotype that they are viewed by Blacks to favour their own ingroup. It was also found in Study 2 that ingroup favouritism meta-stereotypes of ingroup, and to some extent meta-stereotypes of self as ingroup member, are formed through the social projection of ingroup favouritism. It will be necessary to replicate this pattern in particular, examining meta-stereotypes referring to/ the projection of different attributes, given that the focus of the current investigation was intergroup attitudes.

Overall, these findings extended Study 1's results to a more prevalent form of prejudice.

Pre-manipulation analyses new to Study 2 showed that participants rated meta-stereotypes of ingroup most negatively, followed by meta-stereotypes of self as ingroup member, subsequently followed by meta-stereotypes of self as individual. The fact that meta-stereotypes of ingroup were rated most negatively was not surprising. This replicated Study 1, and is in accordance with well-established findings that people rate themselves more positively than their group generally (Alicke & Govorun, 2005; Hodson & Esses, 2002) and in terms of prejudice (Saucier, 2002). What was new was that when group membership was made salient (i.e., "based on your membership in the group,

Whites...”), meta-stereotypes of self were rated more negatively than when it was not. This finding addressed predictions made by Méndez et al. (2007), who stated that these two types of ‘self’ meta-stereotypes would likely be similar, but recognized that differences could be possible. Méndez et al.’s (2007) twofold prediction appears to be supported; these meta-stereotype ratings were similar (they were highly correlated), but distinct (meta-stereotypes of self as ingroup were significantly more negative than meta-stereotypes of self as individual). This finding may also be due to people’s willingness to rate that the group is viewed more negatively than the self (see above); one rates her/himself more positively as a unique individual, as opposed to a typical group member. Thus, this seemingly minor distinction between the two types of meta-stereotypes of self is not insignificant. Future investigators can explore the implications of this distinction.

Projection Findings

The main goal of Study 2 was to investigate social projection and meta-stereotype issues not addressed by Study 1 or the respective literatures. The first of these issues dealt with motivation behind and direction of the projection of intergroup attitudes. Several different analyses illustrated that the strongest projection occurred in the Personal Self-Stereotype and Personal Meta-Stereotype conditions. Of the theoretical models that were tested regarding projection, Study 2 provided clear support for the *Perceptual cognitive overgeneralization* and *Motivated threat* models, and a lack of support for the *Self-as-sample*, *Introjection*, and *Normative influence* models, supporting Hypotheses 2a and 2b. Relative to the *Perceptual cognitive overgeneralization* model, the *Motivated threat* model stands out as supported for several reasons. First, the strongest projection occurred in the most self-concept threatening conditions, and these effects were of large

magnitude, with correlations well over .50 (see Table 13), representing large effects (Cohen, 1988). This best supports the favoured *Motivated threat* model. Second, had the *Perceptual cognitive overgeneralization* model been supported, participants would have used the feedback they were given about the self, “you strongly favour Blacks over Whites” (determined either by the computer or one’s partner), to make inferences about the group. Clearly though, participants did not employ this manipulation feedback in determining their ratings of the group’s ingroup favouritism. In contrast, participants in these conditions rated the self and the group to be *relatively low in ingroup favouritism*, creating more self-group congruency in these conditions, and displaying a self-protective pattern. If a simple cognitive overgeneralization was operating, participants would have used the information provided about the self and endorsed the strong bias. They would have rated the self high in ingroup favouritism, and in turn rated the group high in ingroup favouritism, leading to more self-group congruency. This was not the case, which suggests that participants did not experience perceptual-cognitive overgeneralization.

Although the *Motivated threat* model stood out as supported (Hypothesis 2a), there was an interesting twist, alluded to above. The strongest projection occurred in the self-concept threatening conditions, but interestingly, participants here projected a *low* level of prejudice. That is, self and ingroup ratings were highly correlated, with each rated as quite low in ingroup favouritism. I contend that this further confirms that projection is motivated by self-concept threat in this context. It appears that when participants in these key conditions received this threatening information, it psychologically jarred them, leading to an attempt to deny high ingroup favouritism (on

behalf of the self and the group) even when the self or group was rated higher in ingroup favouritism on pre-manipulation measures (i.e., Personal Self-Stereotype condition).

Based on the evidence presented, it is speculated that participants experienced feelings of self-concept threat which led to the lower ratings of self and group ingroup favouritism, and hence greater self-group congruency of these ratings (i.e., strong projection) in these highly self-concept threatening conditions. It appears that in this threatening condition, participants opted for a double-pronged defence, not only denying bias in self (and ingroup), but also tightening the congruence between self and group on this dimension, to decrease the salience of self-bias and make any bias “normal.”

These results may reflect a display of attributive projection (projection of traits/attitudes onto others to reduce the anxiety of holding an undesirable attitude, see Bramel, 1962, 1963). In the self-concept threatening Personal Self-Stereotype condition however, findings may not reflect a display of attributive projection in its traditional form, but a combination of both defensive (e.g., Newman et al., 1997) and attributive projection. That is, when the socially-undesirable attitude (ingroup favouritism) becomes personally salient, people attempt to deny the attitude due to the threat it poses to the self-concept (consistent Newman et al.’s [1997] defensive projection model), but cannot deny the attitude completely (due to receiving the scientific data in real time¹⁸), acknowledging personal bias at a “safer” level. In a final step of defensiveness, participants project this onto others to reduce the dissonance or threat that remains from being unable to completely deny the attitude, and to gather “back up” or support in the attitude. In the

¹⁸ Bramel (1963) contended that the use of an “impressive” looking apparatus (skin galvanometer) in his study made it difficult for participants to deny homosexual arousal (the attribute they projected). I contend that the highly sensitive computer scored test which provided feedback in the current study appeared equally impressive, and hence make it difficult for participants to completely deny the information it gave.

current context, upon having it determined that one favours Whites over Blacks, a participant's thought sequence might be: "to the extent that I do favour Whites, I am relatively low in ingroup favouritism, and my group is very low in it as well, therefore there is no need for me to feel anxious or threatened by this undesirable attribute." Thus, participants do not completely deny holding the undesirable attribute as defensive projection models suggest, but admit to holding it at a very low, less threatening and more acceptable level, in addition to rating their ingroup similarly to make it even less threatening and even more "acceptable." It appears then, that the projection of prejudice/ingroup favoritism may reflect attributive projection, or a combination of attributive and defensive projection, in conditions of self-concept threat.

No evidence of "introjection" was found. There was a lack of support for the *Introjection* model, which predicted self-group congruency in the direction of group to self. Although the introjection hypothesis cannot be ruled out completely, introjection did not appear to be operating in the current study. It is likely then, that the projection of ingroup favouritism occurs in the direction of self to group, as projection is classically defined. This issue will require further investigation in future research.

Anticipated Intergroup Contact Findings

Another issue that Study 2 investigated was which type of perception(s) had the most negative impact on anticipated intergroup contact. For all dependent variables (with the exception of behavioural avoidance), the *Meta- and other-stereotypes equally dominant* theoretical model was supported. In other words, Meta-Stereotype and Other-Stereotype manipulations exerted equally negative impacts on interaction expectations, diverging from Hypothesis 3, which was based on assertions by Vorauer et al. (1998).

Although Hypothesis 3 predicted negative interaction expectations in both the Meta- and Other-Stereotype conditions, it was not predicted that the expectations would be equally negative across these conditions, yet such equivalence was found. Meta- and Other-Stereotype manipulations led to comparably negative contact expectations. However, with regard to behavioural measures of avoidance, manipulating Personal Meta-Stereotypes led to the most avoidance of the outgroup partner, supporting Vorauer et al. (1998) and H3 (partially) on this measure (arguably a very important dependent variable).

Recall that Vorauer et al. (1998) predict that meta-stereotypes exert a more negative impact on intergroup interactions than other-stereotypes, because meta-stereotypes are believed to be more threatening and anxiety-provoking (among majority group members). Based on the results of Study 2, Vorauer et al. (1998) are accurate in their expectation that meta-stereotypes are highly impactful on intergroup interaction perceptions. Study 2 clearly shows that manipulated meta-stereotypes lead to negative intergroup contact expectations. However, Vorauer et al.'s (1998) assertion that meta-stereotypes would have a more negative impact on intergroup interactions than other-stereotypes is not supported by the current research. This discrepancy may result from the fact that evidence in support of this prediction (Vorauer et al, 1998; Vorauer & Turpie, 2004) has not involved direct meta-stereotype manipulations, or because of other differences present in the current research design. For example, the current study focused on a meta-stereotype referring to one specific attribute (i.e., ingroup favouritism), whereas Vorauer and colleagues typically research meta-stereotypes referring to many attributes.

Another likely possibility is that Vorauer et al. (1998) are correct in their prediction, but only for behavioural measures. As stated above, the results of Study 2 showed that the Personal Meta-Stereotype manipulation led to the most behavioural avoidance (i.e., in this condition the greatest number of participants hit the button allowing them to “bail out” of the intergroup interaction) of an interaction with an outgroup partner, as compared to Other-Stereotype (as well as all other) conditions. Perhaps with regard to actual behaviour in an intergroup interaction situation, meta-stereotypes (personal or “self” meta-stereotypes especially) have the most negative impact on intergroup interactions, whereas expectations, thoughts, and feelings about intergroup contact generally are influenced by both meta- and other-stereotypes equally. This possibility is consistent with recent research by Goff et al. (2008), where the activation of a “White racist” meta-stereotype was correlated with sitting distance (a behavioural variable) in an intergroup (Black-White) interaction under conditions of threat. Thus, Vorauer et al. (1998) may be right to hypothesize that meta-stereotypes have the most negative impact on intergroup interactions, but this distinction may apply primarily to behaviour.

Self-Concept Threat Reaction

An interesting, unpredicted pattern emerged when investigating Hypothesis 3 and the exploratory analyses (and to some extent Hypothesis 2a as well). It was revealed that participants in the Personal Self-Stereotype condition demonstrated the most *positive* intergroup contact expectations and prejudice justification ratings (where differences

existed). In addition, participants in this condition also identified least with the ingroup¹⁹ (marginally) and revealed the lowest (i.e., most positive or socially desirable) post-manipulation self and group ratings of ingroup favouritism. It was originally expected that for participants in this condition, the self-concept threat experienced would lead to neutral contact expectations and high self and group ingroup favouritism ratings. Alternatively though, this self concept-threat appears to have led to a defensive reaction, causing participants to rate everything in a more positive, most socially desirable manner. It is possible that participants' positive ratings of these variables reflected a self-protecting reaction. This is consistent with Monteith's (1993) self regulation model of prejudice. Monteith found that when participants who were low in prejudice (as most of the current sample, MRS mean = .84 on a 0-4 scale) were made to believe they had responded in a prejudiced manner they inhibited future prejudiced responses. Monteith suggested that this reflects a dissonance reducing strategy, brought on by the experience of cognitive dissonance (e.g., Aronson, 1968; Festinger, 1957), and motivated by a threat to the self-concept. Evidence of cognitive dissonance or similar experiences improving intergroup attitudes has been documented by others (e.g., Devine, 1989, Study 3; Gringart, Helmes, & Speelman, 2008). The difference between these studies and the current one is that previous researchers either simply make stereotypes salient (e.g., Devine, 1989, Study 3) or lead participants to believe that they have *done* something prejudiced (e.g., Gringart et al., 2008; Monteith, 1993), whereas in the current study participants were led to believe that they *are* fundamentally prejudiced. These dissonance reducing reactions likely generalize to "you are prejudiced" feedback though, and may be

¹⁹ Participants in this condition likely dis-identified with Whites to be "safe", given that participants overall believed that Whites are viewed by Blacks to be prejudiced (see meta-stereotype findings). Thus, showing less identification with this group would be the most non-prejudiced and socially desirable response.

even stronger, given that such feedback is likely to create a greater self-concept threat than feedback stating that one has simply done something prejudiced. Indeed, previous researchers have suggested that self-concept threat is most intense when the individual views the trait to be negative and inconsistent with one's view of the self (Vorauer et al., 1998).

In the present context then, it appears that the presumed self-concept threat-inducing information (stating that one is high in ingroup favouritism) operated somewhat differently than expected. It was expected to primarily influence the projection of intergroup attitudes, but it appears to have also had a major impact on intergroup contact expectations. Also, self-concept threat was expected to primarily lead to negative, prejudiced responses, but instead it may have led to dissonance reducing non-prejudiced responses. Thus, it appears that the common thread between the influence of self-concept threat on projection outcomes and anticipated intergroup contact outcomes was cognitive dissonance. Regarding projection, upon receiving the self-concept threatening feedback (i.e., "you favour Whites"), participants strongly projected (a low level of) the attitude to reduce the dissonance experienced as a result of this threatening information. Regarding contact expectations, participants under self-concept threat (i.e., those in the Personal Self-Stereotype condition) rated the anticipated intergroup contact quite positively, presumably to reduce the dissonance created by the threatening feedback. So, gathering the support of one's group while responding in a manner inconsistent with the threatening feedback likely reduced participants' dissonance, allowing them to feel more comfortable and less threatened. Future research could more directly test this possibility.

It is also possible that the socially desirable and non-prejudiced ratings in the Personal Self-Stereotype condition are a reflection of a “leaning over backward” effect (Friend & Vinson, 1974). This effect occurs when a participant shifts away from any information that might bias her/his opinions or impressions in an attempt at objectivity or impartiality. It could be that participants in the Personal Self-Stereotype condition reacted against the feedback information they were given in light of its direct negative personal implications. Participants here may have “leaned over backward” (Friend & Vinson, 1974), denying personal bias and reporting willingness to engage in contact with their Black partner to engage in impression management. Future research can further explore the mechanisms involved.

Study 2 Conclusions

This study illustrated the importance of self and group perceptions to intergroup attitudes and consequently, relations. Specifically, the importance of the projection of intergroup attitudes, and prejudice/ingroup favouritism meta-stereotypes and other-stereotypes were demonstrated. Correspondingly, intergroup threat perceptions too, are key to understanding intergroup relations. The projection of intergroup attitudes seems to occur as a *result of* threat, whereas prejudice-relevant meta- and other-stereotypes seem to *result in* responses that reflect threat reactions. Self-concept threat is an important trigger of projection, and an important consequence of meta-stereotypes of self. Intergroup contact threat is an important consequence of meta- and other-stereotypes. These threat perceptions, through the roles they play in social projection, meta-, and other-stereotypes, greatly impact intergroup relations. Self-concept threat leads people to see their intergroup attitudes in the ingroup, which can be detrimental or beneficial to

intergroup relations, depending on the attitudes projected (e.g., high or low prejudice).

Intergroup contact threat on the other hand, leads to negative intergroup contact expectations as a result of prejudice-relevant meta- and/or other-stereotypes, which is largely detrimental to intergroup relations. Thus, projection, meta- and other-stereotypes are related perceptions that are strongly associated with threat, and greatly impact intergroup relations.

Overall, Study 2 fulfilled its objective of further investigating social projection and meta-stereotypes in the context of intergroup attitudes. Study 2 replicated key results of Study 1 using “ingroup favouritism” as the target type of prejudice; provided evidence in support of the hypothesis that projection of intergroup attitudes is a process motivated by self-concept threat; and failed to support the “introjection” hypothesis. Thus, in an intergroup contact setting, self-group congruence ratings are more consistent with a self-to-group process than the reverse. Study 2 also revealed that Meta- and Other-Stereotype manipulations led to equally negative influences on thoughts, feelings, and expectations regarding anticipated intergroup contact, with Personal Meta-Stereotype manipulations leading to heightened actual avoidance of intergroup contact. Finally, Study 2 established that providing people with feedback that they personally favour the ingroup leads to a strong display of egalitarian responses as a backlash. The results of this study will add to the projection, meta-stereotype, and intergroup contact literatures, providing important implications for future research.

General Discussion

Study 1 provided evidence of the social projection of prejudice, the meta-stereotype Whites hold concerning Black's views of White prejudice, the relation between projection and meta-stereotypes in this context, and several correlates of these processes. Study 2 built on these findings, exploring when the ingroup projection of intergroup attitudes occurs strongly, and how meta-stereotypes (and related perceptions) influence intergroup relations. Although these studies investigated similar processes, there were notable differences across the two. Study 1 was correlational in nature, whereas Study 2 involved experimental manipulation. In Study 1, participants were aware that the study would only involve the completion of a survey, whereas Study 2 participants were under the impression that they would soon interact with an outgroup partner. Study 1 investigated *anti-Black prejudice*, whereas Study 2 examined *pro-White ingroup favouritism*, the most common form of intergroup bias. And of course, Study 2 expanded on Study 1, finding more specific results regarding projection and meta-stereotypes. Of the investigations common to both studies, there are some interesting differences and similarities to note.

One difference was that more people more readily admitted ingroup favouritism (Study 2) than anti-Black prejudice (25-27% versus 13% of the sample). This is likely because "ingroup love" *seems* less harsh than "outgroup hate", although in reality, both are quite damaging (see Brewer, 1999). Another difference of note was that meta-stereotypes of self as individual were rated less negatively in Study 1 ($M = 1.42$) than in Study 2 ($M = 4.64$, pre-manipulation, collapsed across conditions analyses). It is unclear why this was the case. Perhaps it was due to the discrepancy noted above.

Perhaps participants were more willing to rate themselves to be viewed negatively in terms of ingroup favouritism than anti-outgroup prejudice. Regardless, the key finding that meta-stereotypes of individual were the type rated most positively compared to the other types of meta-stereotypes, was consistent across studies.

A third notable difference concerned outgroup projection. In Study 1, ratings of Blacks' anti-outgroup prejudice was significantly higher than the midpoint of the scale only for those acknowledging personal anti-outgroup prejudice. In contrast, in Study 2 ratings of Blacks' ingroup favouritism were significantly higher than the midpoint of the scale for both those acknowledging personal ingroup favouritism, and those denying personal ingroup favouritism (although stronger for those acknowledging personal biases). In Study 2 White participants overall viewed a large percentage of Blacks to strongly favour their own ingroup (Blacks), whereas in Study 1, this was only the case for those acknowledging personal prejudice. It is speculated that this too may have been due to the fact that participants were more willing to rate Blacks negatively on ingroup favouritism than anti-outgroup prejudice.

Despite these differences, there were some interesting similarities between the two studies. One similar pattern of findings from Study 1 to Study 2 concerned ingroup identification. There was no relation between ingroup identification and projection in Study 1 or Study 2. It seems logical to assume that the more people identify with their ingroup, the more they would project onto that group; however this relation was not found, even when using a more reliable measure of identification in Study 2. Further, in the condition where participants projected the most (Study 2), they identified *less* with the ingroup. These findings may seem counterintuitive, but ingroup identification and

feeling similar to the ingroup on a particular dimension are not synonymous. It appears that those who project intergroup attitudes feel similar to the group on that dimension, but do not necessarily identify strongly with the group overall. Of the items used to measure ingroup identification (across studies, see appendices B.6 and C.15), only one measured feelings of similarity with the ingroup, all others dealt with the importance of the ingroup to one's identity. It is possible that those who projected strongly in these studies felt very similar to their ingroup, but did not feel that the ingroup was an important part of "who they are." This is consistent with Spears et al.'s (1997) characterization of identification as a general commitment to a category versus an evaluation of one's relative position in a category (i.e., self-group similarity or projection). Thus, a relation should be expected between projection and one's ratings of similarity to the ingroup on the projected dimension, but not necessarily one's ratings of identification with the ingroup overall.

The other notable similarity between the two studies was that key results of Study 1 were replicated in Study 2 (examining pre-manipulation measures). This replication establishes the reliability of these findings. Basic projection and meta-stereotype results were almost identical (in terms of means and effect sizes) from Study 1 to Study 2. Further, these results were replicated in a new context, using a different form of prejudice. Thus, these findings primarily established evidence of the processes in question, allowing Study 2 to go further and investigate more specific hypotheses relating to the social projection of and meta-stereotypes regarding intergroup attitudes.

Limitations

Though the current research produced interesting and novel results, it is not without limitations. First, as is common in many social psychology studies, participants

were university students. Student samples are limited with respect to age range of participants, variability in educational background and political values, and generalizability to the population at large (Sears, 1986). This research was also limited with regard to the prejudice target group studied (i.e., Blacks). The results of this research may only be applicable to White-Black relations. Future research might attempt to replicate the current findings in community samples, and using different target groups.

Limitations specific to Study 1 (e.g., correlational data, lack of an intergroup situation) were remedied by Study 2. One limitation is that Study 2 involved an anticipated, as opposed to actual, interaction context. The primary interest of the study was thoughts/feelings that occur *prior* to an intergroup interaction, and an anticipated interaction allowed this to be investigated successfully. This procedure has been employed by many previous researchers (e.g., Britt et al., 1996, Study 4; Goff et al., 2008; Johnson et al., 2009, Study 2; Plant & Devine, 2003, Study 2; Vorauer et al., 1998, Study 2) and has provided valuable insights into intergroup contact phenomena. However, it would be valuable to obtain data during an intergroup interaction to examine possible differences in behaviour based on experimental condition. This would be especially interesting given evidence that Meta-Stereotype manipulations have a key influence on behaviour in intergroup contact situations (see Study 2).

An additional limitation was that Study 2 involved only negative, or “prejudiced”, feedback. That is, participants were informed in all cases that an individual or a group was high in ingroup favouritism. This allowed for the investigation of the hypotheses of the current study, but it might be useful to examine the effect of giving participants information that an individual or a group is high in egalitarian values. A third limitation

of Study 2 was that the ostensible partner was always an outgroup member. Again, this was ideal for the purposes of the study, but it may have been useful in some cases to have an ingroup partner for comparison purposes. Future research can address these issues.

Directions for Future Research

In addition to addressing the limitations mentioned above, several further considerations for future research arose out of the current investigation. Key areas for future exploration include the direction of projection in this context, the influence of meta-stereotypes on intergroup behaviour, and the seemingly positive implications of prejudice/ingroup favouritism feedback. These are elaborated below.

One issue that requires further investigation is the direction of the projection of intergroup attitudes. The current investigation found no evidence of introjection, but future research will be necessary to completely rule out this hypothesis. After all, it is probable that, at times, we glean personal attitudes from our groups, and research establishes this to be true (e.g., Abrams et al., 1990; Haslam et al., 1996; Stangor, Sechrist, & Jost, 2001). Also, future research should explore whether the introjection hypothesis might be supported when participants are given feedback stating that the ingroup holds egalitarian views, rather than prejudiced ones. It could be that the ingroup feedback information provided in Study 2 was deemed too negative to integrate into the self, but perhaps people would be more willing to do so with more socially desirable intergroup attitudes. Lun, Sinclair, Whitchurch, and Glenn (2007) found that people high in epistemic motivation reduced their implicit prejudice after contact with a person apparently holding egalitarian beliefs. It is possible that the same could occur after contact with a group holding egalitarian attitudes, which would be a reflection of

introjection. Perhaps when the intergroup attitude is socially desirable, self-group congruency ratings may occur in the direction of group to self, at least for some people (those high in epistemic motivation). That Lun et al.'s (2007) finding was specific to those high in epistemic motivation introduces the other possibility that introjection may be influenced by individual differences. It is possible that only certain people are subject to introjection in this context. Future research should examine this possibility.

A second issue for future research deals with the influence of 'prejudiced' meta-stereotypes on intergroup behaviour. Study 2 results illustrated that whereas both Meta- and Other-Stereotype manipulations created negative expectations for intergroup interactions, manipulated Meta-Stereotypes exerted the most negative impact on actual avoidance of intergroup interactions. Previous research has also shown that meta-stereotypes negatively impact behaviour in intergroup interactions (Goff et al., 2008). Given these findings, it will be necessary to further investigate the impact of meta-stereotypes on intergroup behaviour. For instance, it will be important to study the influence of prejudiced meta-stereotypes on additional types of intergroup behaviours (e.g., verbal behaviour, touching, attacking, etc.). It will also be interesting to investigate whether it is possible to reduce negative meta-stereotypes, and whether this in turn reduces negative intergroup behaviour. This could have great implications for reducing prejudice and negative intergroup perceptions.

The last, and arguably most interesting, issue for future research arising out of the current investigation addresses the apparent positive implications of prejudice/ingroup favouritism feedback. The results of the current research illustrated that informing people that they (essentially) were prejudiced, led to very positive intergroup attitudes and

interaction expectations. In particular, participants in the Personal Self-Stereotype (“you favour Whites”) condition viewed prejudice as marginally less justified, and expected their intergroup interaction to be significantly more positive, than the combination of those in all other conditions. It will be necessary to determine why this effect occurs by examining potential mediators. Consistent with previous research (Monteith, 1993), it is speculated that it occurs as a result of feelings of self-concept threat, but future research will need to accurately pinpoint this. Although previous research has demonstrated that challenges to an egalitarian self-concept can improve intergroup attitudes generally (e.g., Devine, 1989, Study 3; Gringart et al., 2008; Monteith, 1993), it will be necessary to determine definitively whether self-concept threat can lead to more positive intergroup contact, as the findings of Study 2 imply. Should this be a reliable phenomenon, it could lead to major improvements in intergroup relations. For example, telling a person that s/he may be prejudiced before entering an intergroup interaction (which can be anxiety-provoking regardless of one’s level of prejudice, Plant, 2004; Stephan & Stephan, 1985, 1989) may lead the person to intensely try to convey an egalitarian attitude and create a smooth interaction, resulting in a very positive interaction and hence, the experience of the beneficial effects of intergroup contact (see Pettigrew & Tropp, 2006) for both parties involved in the interaction. The present investigation, although unable to test it, certainly suggests this possibility.

Conclusion

In conclusion, the current investigation resulted in several important findings that will add greatly to the social projection, meta-stereotype, intergroup contact, and prejudice literatures, and spawn useful future research. This research confirmed the

existence of the projection of intergroup attitudes on behalf of Whites, and the meta-stereotype Whites hold regarding how they are viewed by Blacks in terms of prejudice. It also established an important role of projection in the formation of meta-stereotypes, although this process requires further investigation. This research also determined that the ingroup projection of intergroup attitudes occurs most strongly under conditions of self-concept threat, and that projection in this context appears to operate in the direction of self to group. The current investigation also established that Meta- and Other-Stereotype manipulations are quite detrimental to intergroup relations, and that feedback stating that one is prejudiced may lead to strong egalitarian responses. The current research integrated several related but distinct fields, establishing some important findings and producing exciting new research questions for each.

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Appendix A: Glossary of Terms

Projection

- *Social projection*: the tendency for people to perceive that others share their thoughts, feelings, and behaviours.
- *Outgroup projection at the level of specific category*: involves projecting one's beliefs about a specific group onto the outgroup, e.g., "I (a White person) like Whites, therefore Blacks like Whites too."
- *Outgroup projection at the level of intergroup target category*: involving projecting one's beliefs about an intergroup category onto the outgroup, e.g., "I (a White person) like Whites (my ingroup), therefore Blacks like Blacks (their ingroup)."

Meta- and other-stereotypes

- *Meta-stereotype of ingroup*: the beliefs one holds regarding the stereotypes the outgroup holds about his/her ingroup (e.g.²⁰ "I think Blacks think Whites are prejudiced").
- *Meta-stereotype of self as ingroup member*: the beliefs one holds regarding the stereotypes the outgroup ascribes to him/her personally, based on his/her group membership (e.g., "Because I am White, I think Blacks think I am prejudiced").
- *Meta-stereotype of self as individual*: the beliefs one holds regarding the stereotypes the outgroup ascribes to him/her personally, independent of his/ her group membership (e.g., "I think Blacks think I am prejudiced").

²⁰ All meta-stereotypes in the current study refer to prejudice. All examples are from the perspective of a White person.

- *Personalized meta-stereotypes*: Any type of meta-stereotype regarding the stereotype ONE specific outgroup member holds (e.g., “I think John, a Black person, thinks I am prejudiced”)
- *Other-stereotype*: the stereotype one holds about the outgroup (e.g., “Blacks are prejudiced”)

Experimental Conditions:

- (*Self-stereotype*: the stereotypes one holds about one’s self or one’s group, e.g., “I am prejudiced”)

Personal self-stereotype: In this condition the participant received information that s/he favours Whites.

Group self-stereotype: In this condition the participant received information that White Brock students on average favour Whites.

- (*Other-stereotype*: the stereotype one holds about the outgroup e.g., “Blacks are prejudiced”)

Personal other-stereotype: In this condition the participant received information that his/her Black interaction partner favours Blacks.

Group other-stereotype: In this condition the participant received information that Black Brock students on average favour Blacks.

- (*Meta-stereotypes*: see above)

Personal meta-stereotype: In this condition the participant received information that his/her Black partner thinks the participant personally favours Whites.

Group meta-stereotype: In this condition the participant received information that his/her Black partner thinks that White Brock students on average favour Whites.

Appendix B.1: Study 1 Brock University Ethics Approval

DATE: February 12, 2008

FROM: Michelle McGinn, Chair Research Ethics Board (REB)

TO: Dr. Gordon HODSON, Psychology
Cara MacInnis

FILE: 07-199 HODSON

TITLE: Jokes and Perceptions of Self and Others²²

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: Accepted as Clarified

This project has received ethics clearance for the period of February 12, 2008 to December 1, 2008 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. *The study may now proceed*

²² Note that Study 1 was packaged with another study (a humour study) that was not relevant to Study 1.

Appendix B.2: Study 1 Informed Consent Form

Project Title: Jokes and Perceptions of Self and Others

Principal Investigator: Dr. Gordon Hodson, Brock University Associate Professor ghodson@brocku.ca ; 905-688-5550 ext. 5127; Co-Investigator: Cara MacInnis, cm07jh@brocku.ca

- I understand that this study involves research, and that I am being invited to participate
- I understand that the purpose of this study is to examine humour, attitudes, personality, and perceptions regarding self and other groups and issues relevant to Canada
- I understand that I will be reading jokes, some of which I may find offensive.
- I understand that the expected duration of my participation in this study is approximately 50 minutes.
- I understand the procedures to be followed, which include reading and signing two copies of this consent form; 1 of which I will keep for my own records. Once I have signed the consent form I will be asked to complete a questionnaire package. After the package has been completed, the researcher will provide me with a debriefing form explaining the general purpose of the study.
- I understand that there are no known or anticipated risks associated with participation in this research, and I understand that this study can count as research participation in a psychology course. As a participant I will also gain experience concerning how research in social psychology is conducted.
- All information provided is considered confidential; my name will not be included or, in any other way, associated with the data collected in the study. Furthermore, because the interest is in the average responses of the entire group of participants, I will not be identified individually in any way in written reports of this research
- I understand that only the Principal Investigator (Dr. Gordon Hodson) and the research assistant(s) collecting the data will have access to my data, and that all information will be stored securely in a locked filing cabinet. Given the intentions of publishing the results, data will be kept until approximately 5-7 years from date, after which all data will be destroyed/ shredded.
- I understand that any other person participating in this study in the same session as I am holds the same right to privacy as I do. Therefore I will ensure that I do not reveal to anyone the identity of others present during this session.
- I understand that the results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available approximately 6 months from date.
- I understand that participation is voluntary; refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled and I may discontinue participation at any time; I understand that my data cannot be withdrawn after submission, but it remains anonymous. If I withdraw, I can still receive payment or course participation.
- I understand that some questions may make me feel uncomfortable and if I wish, I may decline to answer any questions or participate in any component of the study.

If you have any questions about this study or require further information, please contact the Principal Investigator using the contact information provided above. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

This study has been reviewed and received ethics clearance through Brock University's Research Ethics Board (file # 07-199)

I _____ (please print)

1. Have read and understood the relevant information regarding this research project
2. Understand that I may ask questions in the future
3. Indicate free consent to research participation by signing this research consent form

Participant's Signature: _____ **Date:** _____

Researcher's Signature: _____ **Date:** _____

Below complete EITHER Form A or Form B (in recognition that you will receive payment OR course participation).

FORM A. I am participating in this experiment for \$5. This experiment will not count toward research participation hours in a psychology course.

Signature of participant

Signature of experimenter

FORM B. I am participating in this experiment for research participation in a psychology course and will not receive monetary payment for this experiment.

Signature of participant

course for participation

Signature of experimenter

If you would like a copy of the results for this study (approximately 6 months from date) and/or would like to be informed of any publication of the results, please provide your email address below.

Please keep a copy of consent form for your own records

Appendix B.3: Study 1 Projection Materials

(a) Dichotomous prejudice measure:

Are you prejudiced against Black people (circle one) **YES** **NO**

(b) Ingroup's anti-outgroup prejudice measure:

Specifically, what percentage of White people hold negative (prejudicial) attitudes toward Blacks? (0-100%) _____ %

(c) Continuous acknowledgement of personal bias measure:

To what extent do you consider yourself prejudiced against Black people?

0	1	2	3	4	5	6	7	8	9	10
Not at all										Very much

(d) Outgroup's anti-outgroup prejudice measure:

Specifically, what percentage of Black people hold negative (prejudicial) attitudes toward Whites? (0-100%) _____ %

Appendix B.4: Study 1 Meta-stereotype Materials

(a) meta-stereotype of ingroup

To what extent does the average BLACK person view WHITES IN GENERAL to be prejudiced against Black people?

0	1	2	3	4	5	6	7	8	9	10
Not at all										Very much

(b) meta-stereotype of self as individual

To what extent do BLACK people generally view YOU personally to be prejudiced against Black people?

[illegible]

Please indicate your responses to the following questions.

(b) Continuous acknowledgement of personal bias measure (note this was not measured twice, but used to calculate projection scores and also as an alternative measure of prejudice):

0	1	2	3	4	5	6	7	8	9	10
Not at all										Very much

Appendix B.6: Study 1 Ingroup Identification Scale

	1	2	3	4	5	6	7
	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Disagree Nor Agree	Slightly Agree	Moderately Agree	Strongly Agree
1. Overall, being White has very little to do with how I feel about myself.(R)	1	2	3	4	5	6	7
2. Being White is an important reflection of who I am.	1	2	3	4	5	6	7
3. Being White is unimportant to my sense of what kind of person I am.(R)	1	2	3	4	5	6	7
4. In general, being White is an important part of my self-image.	1	2	3	4	5	6	7

1 2 3 4 5 6 7

Strongly Agree

1. Some groups of people are just more worthy than others. _____
2. We should do what we can to equalize conditions for different groups (R) _____
3. In getting what your group wants, it is sometimes necessary to use force against other groups. _____
4. If certain groups of people stayed in their place, we would have fewer problems. _____
5. We would have fewer problems if we treated different groups more equally (R) _____
6. To get ahead in life, it is sometimes necessary to step on other groups. _____
7. No one group should dominate in society.(R) _____
8. Group equality should be our ideal.(R) _____
9. All groups should be given an equal chance in life.(R) _____
10. We must increase social equality(R) _____
11. Superior groups should dominate inferior groups. _____
12. It's probably a good thing that certain groups are at the top and other groups are at the bottom. _____
13. We must strive to make incomes more equal. (R) _____
14. Sometimes other groups must be kept in their place. _____
15. It would be good if all groups could be equal. _____
16. Inferior groups should stay in their place.(R) _____

Appendix B.8: Study 1 Right Wing Authoritarianism Scale

Please circle your response, using the scale below.

1 Strongly Disagree	2 Moderately Disagree	3 Slightly Disagree	4 Neither Disagree Nor Agree	5 Slightly Agree	6 Moderately Agree	7 Strongly Agree
<hr/>						
1. Gays and lesbians are just as healthy and moral as anybody else.(R)						
1	2	3	4	5	6	7
2. Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly. (R)						
1	2	3	4	5	6	7
3. There are many radical, immoral people in our country today who are trying to ruin it for their godless purposes, whom the authorities should put out of action.						
1	2	3	4	5	6	7
4. Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibre and traditional beliefs.						
1	2	3	4	5	6	7
5. The situation in our country is getting so serious, the strongest methods would be justified if they eliminated the troublemakers and got us back to our true path.						
1	2	3	4	5	6	7
6. Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else.(R)						
1	2	3	4	5	6	7
7. People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral. (R)						
1	2	3	4	5	6	7
8. The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas.						
1	2	3	4	5	6	7
9. There is nothing wrong with premarital sexual intercourse. (R)						
1	2	3	4	5	6	7
10. What our country <i>really</i> needs, instead of more “civil rights” is a good, stiff dose of law and order.						
1	2	3	4	5	6	7
11. Some of the best people in our country are those who are challenging our government, criticizing religion, and ignoring the “normal way” things are supposed to be done. (R)						
1	2	3	4	5	6	7
12. The facts on crime, sexual immorality, and the recent public disorders all show that we have to crack down harder on deviant groups and trouble-makers if we are going to save our moral standards and preserve law and order.						
1	2	3	4	5	6	7

Appendix B.9: Study 1 Prejudice Justification Materials

(a) Justification based on the beliefs of Whites:

White people hold attitudes (positive and negative) toward Blacks for a variety of cultural and personal reasons. To what extent do these attitudes held by **Whites** validate or explain **your own** attitude (positive or negative) toward Blacks?

1	2	3	4	5	6	7	8	9
Not at all								Very much

(b) Justification based on the beliefs of Blacks:

Black people hold attitudes (positive and negative) toward Whites for a variety of cultural and personal reasons. To what extent do these attitudes held by **Blacks** validate or explain **your own** attitude (positive or negative) toward Blacks?

1	2	3	4	5	6	7	8	9
Not at								Very much

(c) General prejudice justification:

1. Do you think that ethnic prejudice is justifiable?

1	2	3	4	5	6	7
Not at all			Moderately			Very

2. Do you think that ethnic prejudice is warranted?

1	2	3	4	5	6	7
Not at all			Moderately			Very

3. To what extent is ethnic prejudice legitimate?

1	2	3	4	5	6	7
Not at all			Moderately			Very

4. To what extent is ethnic prejudice appropriate?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

5. To what extent is it understandable that people hold negative attitudes toward members of other ethnic groups?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

6. How easy is it to defend ethnic prejudice?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

7. How easy is it to excuse ethnic prejudice?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

Appendix B.10: Study 1 Intergroup Anxiety Scale

If you were the only White person interacting with a group of Black people (e.g., talking with them, working on a project with them), how would you feel compared to occasions when you were interacting with White people?

	Not at all					Extremely	
	-3	-2	-1	0	+1	+2	+3
(i) I would feel <u>awkward</u>	-3	-2	-1	0	+1	+2	+3
(ii) I would feel <u>self-conscious</u>	-3	-2	-1	0	+1	+2	+3
(iii) I would feel <u>happy</u> (R)	-3	-2	-1	0	+1	+2	+3
(iv) I would feel <u>accepted</u> (R)	-3	-2	-1	0	+1	+2	+3
(v) I would feel <u>confident</u> (R)	-3	-2	-1	0	+1	+2	+3
(vi) I would feel <u>irritated</u>	-3	-2	-1	0	+1	+2	+3
(vii) I would feel <u>impatient</u>	-3	-2	-1	0	+1	+2	+3
(ix) I would feel <u>defensive</u>	-3	-2	-1	0	+1	+2	+3
(x) I would feel <u>suspicious</u>	-3	-2	-1	0	+1	+2	+3
(xi) I would feel <u>careful</u>	-3	-2	-1	0	+1	+2	+3

Appendix B.11: Study 1 Outgroup Avoidance Scale

To what extent do you avoid interacting with Black people?

0	1	2	3	4	5	6	7	8	9	10
Not at all										Very much

Appendix B.12: Study 1 Demographics

INFORMATION ABOUT YOU

Age: _____ years old

Sex (check one): ' Male ' Female

Ethnic Background (check any that apply):

' White/Caucasian/European

' Black/African-American

' Asian

' Aboriginal Peoples of Canada

' Middle Eastern

' Hispanic/Latino/South American

' Other (please specify): _____

Please place a checkmark ("✓") beside any group that you consider yourself a member (if any)

CANADIANS	_____
WHITE PEOPLE	_____
AMERICANS	_____
BLACK PEOPLE	_____
MEXICANS	_____
IMMIGRANTS	_____
ETHNIC MINORITIES	_____
HOMOSEXUALS	_____
JEWS	_____
THE POOR	_____
FOREIGNERS	_____
ABORIGINAL PEOPLES OF CANADA	_____
DRUG ADDICTS	_____
MUSLIMS	_____

Appendix B.13: Study 1 Debriefing Form

Project Title: Jokes and Perceptions of Self and Others

Principal Investigator: Dr. Gordon Hodson
Brock University Associate Professor
ghodson@brocku.ca ; 905-688-5550 ext. 5127
Co-Investigator: Cara MacInnis

The purpose of this research is to examine in-group (i.e. own group) perceptions of in-group racial attitudes, and in-group perceptions of out-group (i.e. other group) beliefs about in-group racial attitudes. Specifically, this research pertains to White-Black relations, as a function of perceptions of oneself, one's own group, and other racial groups.

We are investigating the relations among perceptions of in-group/ out-group attitudes, several personality variables (e.g., authoritarianism, social dominance), intergroup attitudes (e.g., attitude thermometer), and related beliefs about racial attitudes, such as whether they are justified.

This research is important as it will help us understand how "we view others" and how we think "others view us." This study will build on current research and act as a step toward understanding the causes of negative racial attitudes. In addition we are examining how people perceive jokes toward Mexicans. These jokes were quite disparaging (offensive), as we are interested in how certain personality types perceive such jokes and such humour appreciate relates to attitudes toward Mexicans.

If any part of the study has made you feel especially uncomfortable and you wish to seek help in dealing with your feelings, please note that the Student Development Center at Brock offers personal counseling services to students free of charge for any personal/ social concerns or difficulties students may have. To make an appointment with a counselor, phone 905-684-6891.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the Research Ethics Officer at Brock University at 905-688-5550, extension 3035. This project has been reviewed and received ethics clearance through the Office of Research Ethics Board, Brock University (File # 07-199).

Thank you for your time and support in participating in this study!

Dr. Gordon Hodson

If you have any questions or concerns please feel free to contact any of the researcher (see above).

Appendix C.1: Study 2 Brock University Ethics Approval

DATE: September 22, 2008

FROM: Michelle McGinn, Chair Research Ethics Board (REB)

TO: Dr. Gordon HODSON, Psychology
Cara MacInnis

FILE: 08-042 HODSON

TITLE: Perceptions of Self and Others

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: ACCEPTED AS CLARIFIED

This project has received ethics clearance for the period of **September 22, 2008 to July 31, 2009** subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. *The study may now proceed.*

Appendix C.2: Study 2 Informed Consent Form

Project Title: Perceptions of Self and Others

Principal Investigator: Dr. Gordon Hodson, Brock University Associate Professor
ghodson@brocku.ca; 905-688-5550 ext. 5127;

Co-Investigator: Cara MacInnis, cm07jh@brocku.ca

- I understand that this study involves research, and that I am being invited to participate
- I understand that the purpose of this study is to examine attitudes, personality, and perceptions regarding other groups (e.g., racial, social, economic groups) and issues relevant to Canada.
- I understand that the expected duration of my participation in this study is approximately 50 minutes.
- I understand the procedures to be followed, which include reading and signing two copies of this consent form; 1 of which I will keep for my own records. Once I have signed the consent form I will be asked to complete a questionnaire package on a computer. Afterwards the researcher will provide me with a debriefing form explaining the general study purpose.
- I understand that this study can count as research participation in a psychology course. As a participant I will also gain experience concerning how research in social psychology is conducted.
- All information provided is anonymous; my name will not be included or, in any other way, associated with the data collected in the study. Furthermore, because the interest is in the average responses of the entire group of participants, I will not be identified individually in any way in written reports of this research
- I understand that only the Principal Investigator (Dr. Hodson) and the research assistant(s) collecting the data will have access to my data, and that all information will be stored securely in password protected computer files. Given the intentions of publishing the results, data will be kept until approximately 5-7 years from date, after which all data will be destroyed.
- I understand that any other person participating in this study in the same session as I am holds the same right to privacy as I do. Therefore I will ensure that I do not reveal to anyone the identity of others present during this session.
- I understand that the results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available approximately 6 months from date.
- I understand that there is a risk that I may experience mild emotional distress during the study
- I understand that participation is voluntary; refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled and I may discontinue participation at any time; I understand that my data cannot be withdrawn after submission, but it remains anonymous. If I withdraw, I can still receive payment or course participation. Thus, I may withdraw at any point during the study, but once I have completed the study, my data cannot be withdrawn due its anonymous nature.
- I understand that some questions may make me feel uncomfortable and if I wish, I may decline to answer any questions or participate in any component of the study.

If you have any questions about this study or require further information, please contact the Principal Investigator using the contact information provided above. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

This study has been reviewed and received ethics clearance through Brock University's Research Ethics Board (file # 08-042)

I _____ (please print)

1. Have read and understood the relevant information regarding this research project
2. Understand that I may ask questions in the future
3. Indicate free consent to research participation by signing this research consent form

Participant's Signature: _____ **Date:** _____

Researcher's Signature: _____ **Date:** _____

Below complete EITHER Form A or Form B (in recognition that you will receive payment OR course participation).

FORM A. I am participating in this experiment for \$5. This experiment will not count toward research participation hours in a psychology course.

Signature of participant

Signature of experimenter

FORM B. I am participating in this experiment for research participation in a psychology course and will not receive monetary payment for this experiment.

Signature of participant

course for participation

Signature of experimenter

If you would like a copy of the results for this study (approximately 6 months from date) and/or would like to be informed of any publication of the results, please provide your email address below.

Please keep a copy of consent form for your own records

Appendix C.3: Study 2 Pre-manipulation Demographics

INFORMATION ABOUT YOU

Age: _____ years old

Sex (check one): ☐ Man ☐ Woman

Year of Study (choose one): 1 2 3 4 5+

Ethnic Background (check which best applies):

☐ White/Caucasian/European

☐ Black/African-Canadian

☐ Asian

☐ Aboriginal Peoples of Canada

☐ Middle Eastern

☐ Hispanic/Latino/South American

☐ Other (please specify): _____

Please briefly list your hobbies or things you like to do in your spare time: -

Appendix C.6: Study 2 Pre-manipulation Big Five Inventory

Here are a number of characteristics that may or may not apply to you. Please choose a number for each statement to indicate the extent to which you agree or disagree with that statement.

- 5 = agree strongly
 4 = agree a little
 3 = neither agree nor disagree
 2 = disagree a little
 1 = disagree strongly

I see myself as someone who...

- | | |
|------------------------------------------------|-------------------------------------------------------|
| ___ 1. is talkative | ___ 23. tends to be lazy |
| ___ 2. tends to find fault with others | ___ 24. is emotionally stable, not easily upset |
| ___ 3. does a thorough job | ___ 25. is inventive |
| ___ 4. is depressed, blue | ___ 26. has an assertive personality |
| ___ 5. is original, comes up with new ideas | ___ 27. can be cold and aloof |
| ___ 6. is reserved | ___ 28. perseveres until the task is finished |
| ___ 7. is helpful and unselfish with others | ___ 29. can be moody |
| ___ 8. can be somewhat careless | ___ 30. values artistic, aesthetic experiences |
| ___ 9. is relaxed, handles stress well | ___ 31. is sometimes shy, inhibited |
| ___ 10. is curious about many different things | ___ 32. is considerate and kind to almost everyone |
| ___ 11. is full of energy | ___ 33. does things efficiently |
| ___ 12. starts quarrels with others | ___ 34. remains calm in tense situations |
| ___ 13. is a reliable worker | ___ 35. prefers work that is routine |
| ___ 14. can be tense | ___ 36. is outgoing, sociable |
| ___ 15. is ingenious, a deep thinker | ___ 37. is sometimes rude to others |
| ___ 16. generates a lot of enthusiasm | ___ 38. makes plans and follows through with them |
| ___ 17. has a forgiving nature | ___ 39. gets nervous easily |
| ___ 18. tends to be disorganized | ___ 40. likes to reflect, play with ideas |
| ___ 19. worries a lot | ___ 41. has few artistic interests |
| ___ 20. has an active imagination | ___ 42. likes to cooperate with others |
| ___ 21. tends to be quiet | ___ 43. is easily distracted |
| ___ 22. is generally trusting | ___ 44. is sophisticated in art, music, or literature |

Appendix C.7: Study 2 Pre-manipulation Meta-stereotype Measures

(a) meta-stereotype of self as individual

To what extent do Blacks *view you* to favour Whites over Blacks?

[illegible]

(b) meta-stereotype of self as ingroup member

Based on your membership in the group, Whites, to what extent do Blacks view you to favour Whites over Blacks?

[illegible]

(c) meta-stereotype of ingroup (percent)

What percentage of Whites do Blacks believe favour Whites over Blacks? (0-100%)

(d.) meta-stereotype of ingroup (degree)

To what extent do Blacks view *Whites in general* to favour Whites over Blacks?

	1	2	3	4	5	6	7	8	9	10
Not at all										Very much

Appendix C.8: Study 2 Pre-manipulation Other-stereotype Measures

(a) Other-stereotype (percent)

What percentage of Black people favour Blacks over Whites? (0-100%) _____ %

(b) Other-stereotype (degree)

To what extent do Blacks favour Blacks over Whites?

0	1	2	3	4	5	6	7	8	9	10
Not at all										Very much

(Note: These measures were also used to measure outgroup's ingroup favouritism; they were not measured twice).

Appendix C.9: Study 2 Manipulation Phase Messages

Note: all messages received by participants are printed in italics, text not in italics is provided for ease of interpretation.

After pre-manipulation measures:

Please wait while the computer tabulates your scores on several constructs based on the information you just provided.

Delay, then:

This is a study regarding interpersonal interaction. Each participant will be having a brief 5 minute discussion on a pre-arranged topic (i.e., current movies, etc.) with another participant. First, you and your partner will be given some information about yourselves, and then you will be asked to respond to some questions. Afterwards, the interaction with your partner can begin.

Participants then received demographic information from their apparent partner:

An interaction partner has been selected for you from the students participating in the study.

*Based on the information your partner gave us, your partner (**Participant #**) is a **Black (man or woman)**, age 20. Your partner's hobbies include: **hanging out with friends and watching TV**.*

Delay, then:

You have been randomly assigned to a condition in which:

Participants received only ONE of the messages from each list below. Those in the Personal Self-Stereotype condition received the 'a' messages, those in the Group Self-Stereotype condition received the 'b' messages, those in the Personal Other-stereotype condition received the 'c' messages, those in the Group Other-Stereotype condition received the 'd' messages, those in the Personal Meta-Stereotype condition received the 'e' messages, and those in the Group Meta-Stereotype condition received the 'f' messages.

(a) You will be given feedback regarding the tasks you completed at the beginning of the study

(b) You will be given feedback regarding the tasks completed by the average of the WHITE participants who have completed the study prior to today

*(c) you will be given feedback regarding the tasks your **partner** completed at the beginning of the study*

(d) You will be given feedback regarding the tasks completed by BLACK participants who have completed the study prior to today

*(e) your partner has been given feedback regarding tasks **you** completed at the beginning of this study*

(f) your partner has been given feedback regarding the tasks completed by the WHITE participants who have completed the study prior to today

Then participants received information corresponding with their condition:

(a) From this information (your completion of the preliminary measures, which included a highly sensitive unconscious measure of White/ Black preferences), the computer algorithm system has determined that you strongly favour Whites over Blacks

(b) From this information (Whites' completion of the preliminary measures, which included a highly sensitive unconscious measure of White/ Black preferences), the computer algorithm system has determined that the White Brock students tested before today strongly favour Whites over Blacks

(c) From this information (your partner's completion of the preliminary measures, which included a highly sensitive unconscious measure of White/ Black preferences), the computer algorithm system has determined that your partner strongly favours Blacks over Whites

(d) From this information, (Blacks' completion of the preliminary measures, which included a highly sensitive unconscious measure of White/ Black preferences), the computer algorithm system has determined that the Black Brock students tested before today strongly favour Blacks over Whites

(e) Based on the information, (your completion of the preliminary measures, which included a highly sensitive unconscious measure of White/ Black preferences), your partner has rated you as someone who strongly favours Whites over Blacks

(f) Based on this information, (Whites' completion of the preliminary measures, which included a highly sensitive unconscious measure of White/ Black preferences), your partner has rated the White Brock students tested before today as people who strongly favour Whites over Blacks

Delay, then participants then received the following message:

Keeping in mind the information you just received, you will now be asked to answer some questions regarding your upcoming interaction.

Participants then responded to Post-manipulation measures.

To what extent do you expect to feel the following during the upcoming interaction with your partner?

	Not at all							Extremely	
	-3	-2	-1	0	+1	+2	+3		
(i) I will feel <u>awkward</u>	-3	-2	-1	0	+1	+2	+3		
(ii) I will feel <u>self-conscious</u>	-3	-2	-1	0	+1	+2	+3		
(iii) I will feel <u>happy</u>	-3	-2	-1	0	+1	+2	+3		
(iv) I will feel <u>accepted</u> (R)	-3	-2	-1	0	+1	+2	+3		
(v) I will feel <u>confident</u> (R)	-3	-2	-1	0	+1	+2	+3		
(vi) I will feel <u>irritated</u> (R)	-3	-2	-1	0	+1	+2	+3		
(vii) I will feel <u>impatient</u>	-3	-2	-1	0	+1	+2	+3		
(ix) I will feel <u>defensive</u>	-3	-2	-1	0	+1	+2	+3		
(x) I will feel <u>suspicious</u>	-3	-2	-1	0	+1	+2	+3		
(xi) I will feel careful	-3	-2	-1	0	+1	+2	+3		

To what extent do you wish to avoid the interaction with your partner?

[illegible]

To what extent would you rather not interact with your partner?

[illegible]

To what extent will your partner view *you* to favour Whites over Blacks?

[illegible]

Based on your membership in the group, White Brock students, to what extent will your partner view you to favour Whites over Blacks?

[illegible]

According to your partner, what percentage of White Brock students favour Whites over Blacks? (0-100%) .

To what extent does your partner view White Brock students to favour Whites over Blacks?

[illegible]

Appendix C.12: Study 2 Post-manipulation Personalized Other-stereotype Measure

To what extent does your partner favour Blacks over Whites?

[illegible]

Appendix C.13: Study 2 Post-manipulation Quality of Interaction Measures

(a) self-ratings

To what extent *do you expect* the interaction with your partner to be:

(a.) Pleasant

[illegible]

(b.) Cooperative

[illegible]

(c.) Superficial and Insincere

[illegible]

(b) partner-ratings

To what extent do you think your partner expects the interaction with you to be:

(a.) Pleasant

[illegible]

(b.) Cooperative

0	1	2	3	4	5	6	7	8	9	10
Not at all										Very much

(c) Superficial and Insincere

[illegible]

Do you favour Whites over Blacks? (choose one) YES NO

What percentage of White people favour Whites over Blacks? (0-100%) %

What percentage of Black people favour Blacks over Whites? (0-100%)

To what extent do Whites favour Whites over Blacks?

[illegible]

To what extent do Blacks favour Blacks over Whites?

0		10	20	30	40	50	60	70	80	90	100
Not at all											Very much

To what extent do you favour Whites over Blacks?

[illegible]

a. how important to your self-identity is being White

[illegible]

b. To what extent you consider yourself to be similar to other Whites

[illegible]

c. How attached are you to the group Whites?

[illegible]

Appendix C.16: Study 2 Post-manipulation Prejudice Justification Scale

1. Do you think that ethnic prejudice is justifiable?

1	2	3	4	5	6	7
Not at all			Moderately			Very

2. Do you think that ethnic prejudice is warranted?

1	2	3	4	5	6	7
Not at all			Moderately			Very

3. To what extent is ethnic prejudice legitimate?

1	2	3	4	5	6	7
Not at all			Moderately			Very

4. To what extent is ethnic prejudice appropriate?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

5. To what extent is it understandable that people hold negative attitudes toward members of other ethnic groups?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

6. How easy is it to defend ethnic prejudice?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

7. How easy is it to excuse ethnic prejudice?

1	2	3	4	5	6	7
Not at all			Moderately			Very much so

Appendix C.17: Study 2 Post-manipulation Behavioural Avoidance Measure

Participant receives the following message:

*At this point we may begin the interpersonal interaction part of the study. You will recall that your interaction partner is Participant # a **Black 20** year old **SEX**. You have a choice whether or not you would like to participate in this interaction. You can either participate in the 5 minute interaction with your interaction partner, or participate in an interaction with a different randomly chosen interaction partner. If you would like to participate in the interaction with your assigned partner, Participant # please check YES. If you would rather avoid this interaction and interact with a new partner please check NO.*

(MUST CHOOSE Yes OR No)

- Yes, I would like to interact with my assigned partner
- No, I would rather not interact with my assigned partner, and would rather interact with a new partner

Appendix C.18: Study 2 Suspicion Check Measure

Can you guess the hypotheses of the study? (i.e., what do you think the study is about?)

Did anything about the study make you suspicious? (Choose one.) YES NO

If YES, please elaborate:

Appendix C.19: Study 2 Manipulation Check Measure

Earlier in the study, you received some information from the computer. From the following list, please choose the information you received.

I received information that:

- (a) I strongly favour Whites over Blacks
- (b) White Brock students strongly favour Whites over Blacks
- (c) My interaction partner strongly favours Blacks over Whites
- (d) Black Brock students strongly favour Blacks over Whites
- (e) My partner determined me to be someone who strongly favours Whites over Blacks
- (f) My partner determined White Brock student study participants to be people who strongly favour Whites over Blacks
- (g) I did not receive any of this information

Appendix C.20: Study 2 Written Debriefing Form

Project Title: Perceptions of Self and Others

Principle Investigator: Dr. Gordon Hodson, Brock University Associate Professor
ghodson@brocku.ca ; 905-688-5550 ext. 5127

Co-Investigator: Cara MacInnis cm07jh@brocku.ca

The purpose of this research is to examine in-group (i.e. own group) perceptions of in-group racial attitudes, and perceptions of out-group (i.e. other group) beliefs about in-group racial attitudes. Specifically, this research pertains to ingroup-outgroup relations, as a function of perceptions of oneself, one's own group, and other racial groups. We are interested in people's perceptions of ingroups (the group that one belongs to) and outgroups (a group one does not belong to). For example, we could have compared perceptions of women and men, old and young, etc. It is important to remember that people fall on a continuum with regard to their feelings about outgroups and there is a wide range of feelings people can have toward outgroups. Where you fall on this range does not necessarily make you a good or bad person. We hope you understand that it was necessary to misinform participants at some points during the study to allow for natural reactions. This research program is particularly novel and very important to the field of social psychology. We thank you so much for being a part of it

This research is important as it will help us understand the impact of how "we view others" and how we think "others view us" on intergroup relations. This study will build on current research and act as a step toward understanding the causes of negative racial attitudes. We are also investigating the relations among perceptions of in-group/ out-group attitudes, several personality variables (e.g., authoritarianism, social dominance), intergroup attitudes (e.g., ingroup favouritism), and related beliefs about racial attitudes, such as whether they are justified.

In this study you were told you would be interacting with a partner, however no interaction took place for you or any of the participants in the study, and none was intended. For our research purposes we needed to study the perceptions in anticipation of an interaction. Therefore, it was not necessary for you to actually interact with someone; your responses in anticipation of this interaction will be very useful to our research and understanding of psychology.

In this study, you were given information about your own or others' racial biases. However, in reality we have not yet coded participants' responses so we currently have no way of knowing who is high or low in biases. Moreover, all data truly is anonymous, and we are interested in the average responses of the entire group of participants, so we will never know. It was deemed necessary to give you this fictitious information so we could study some very important research questions.

Because anonymity is very important to this study, we ask that you please do **not** discuss any part of this study with your friends, peers, or classmates who are likely to take part in the study. The study will be compromised if you discuss its procedures with potential participants. In psychological research, it is often very important that participants are unaware of the procedures and hypotheses of a study before they participate in it. We hope you have learned something about psychological research processes by taking part in this study. However, if you wish to discuss the study with people who have already participated in the study, or people who never will participate (e.g., parents, friends who do not attend Brock), that is acceptable.

We hope you will learn something about intergroup relations from participating in this research. . For further reading on the topics studied by this research, please see the bottom of this page.

Please keep in mind this study is completely anonymous and there is no way to match data to specific participants.

If any part of the study has made you feel especially uncomfortable and you wish to seek help in dealing with your feelings, please note that the Student Development Center at Brock offers personal counseling services to students free of charge for any personal/ social concerns or difficulties students may have. To make an appointment with a counselor, phone 905-684-6891. If you feel stressed for any reason following this study, please take advantage of the following useful websites:

<http://www.stresslesscountry.com/>

<http://www.webmd.com/balance/stress-management/default.htm>

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the Research Ethics Officer at Brock University at 905-688-5550, extension 3035. This project has been reviewed and received ethics clearance through the Office of Research Ethics Board, Brock University (File # 08-042).

Thank you for your time and support in participating in this study!
Dr. Hodson

If you have any questions or concerns please feel free to contact any of the researchers (see above).

Further Reading:

Robbins, J.M. & Krueger, J. (2005). Social projection to ingroups and outgroups.

Personality and Social Psychology Review, 9, 32-47.

Appendix C.21: Study 2 Verbal Debriefing Script

Thank you for participating in the study. I want to let you know a few things about the study you just completed.

First of all, the feedback you were given after the preliminary measures of the study was fictitious. You would have received information regarding either your own or others' racial biases. However, participants' responses have not yet been coded, and we currently have no way of knowing who is high or low in biases. Moreover, all data truly is anonymous, so we will never know. The information you received was therefore was not necessarily true. We needed to give participants this potentially false information due to some very pressing research questions regarding intergroup perceptions and attitude justifications. There is a great need for research where participants are given this type of information, and because we were able to do this; this study is likely to be highly influential. Therefore, we thank you for your participation.

Secondly, you will notice that there was no interaction with a partner. This is because our main research questions focus on reactions to anticipated, as opposed to real, interactions. We appreciate the time you've given to the study, and because we know your time is important to you, we did not feel it was necessary to have you partake in an interaction that was not of primary interest to us, so we never intended for you to have an interaction. The information provided up to this point will be very useful for our research.

This study was about group differences. We are interested in people's perceptions of ingroups (the group that one belongs to) and outgroups (a group one does not belong to). For example, we could have compared perceptions of women and men, old and young, etc. It is important to remember that people fall on a continuum with regard to their feelings about outgroups and there is a wide range of feelings people can have toward outgroups. Where you fall on this range does not necessarily make you a good or bad person.

We hope you understand that it was necessary to misinform participants at some points during the study to allow for natural reactions. This research was particularly novel, and very important to the field of social psychology. We thank you so much for being a part of it

Do you have any questions/ concerns about the study?

Because anonymity is very important to this study, we ask that you please do not discuss any part of this study with your friends, peers, or classmates who are likely to take part in the study. It is imperative you do not discuss the study with such people, for if you do your time will have been wasted. The study will be compromised if you discuss its procedures with potential participants. In psychological research, it is often very important that participants are unaware of the procedures and hypotheses of a study before they participate in it. We hope you have learned something about psychological research processes by taking part in this study. If you wish to discuss the study with people who have already participated in the study, or people who never will participate (e.g., parents, friends who do not attend Brock), that is acceptable.

If you feel uncomfortable following this study, the debriefing form will give you resources to deal with any potential stress you may have regarding the study.

This study is completely anonymous. Because of the way the computer has been programmed to save data, I don't even have a way to match data with specific participants. Moreover, the interest is in the average responses of the entire group of participants, not the responses of specific individuals.

I will give you this debriefing form which also provides more detail about the study. If you have any further questions please do not hesitate to use the contact information on this form. Again, we thank you for your time and participation.

Appendix D: Effect Coding Scheme

Table 20 displays the effect coding scheme used in several analyses to compare conditions to the grand mean. There are 5 coded predictors, in which the group labeled 1 was compared to the grand mean. Condition 3 (the Personal Other-Stereotype condition) was chosen as the base group and coded -1. The Personal Other-Stereotype condition was chosen as it was not of interest at any point to compare group 3 to the grand mean. In E1 the Personal Self-Stereotype condition was compared to the grand mean, in E2 the Group Self-Stereotype condition was compared to Grand mean, in E3 the Group Other-Stereotype condition was compared to Grand mean, in E4 the Personal Meta-Stereotype condition was compared to Grand mean, and in E5 the Group Meta-Stereotype condition was compared to Grand mean.

Table 20.

Effect Coding Scheme

Condition	E1	E2	E3	E4	E5
Personal Self-Stereotype	1	0	0	0	0
Group Self-Stereotype	0	1	0	0	0
Personal Other-Stereotype	-1	-1	-1	-1	-1
Group Other-Stereotype	0	0	1	0	0
Personal Meta-Stereotype	0	0	0	1	0
Group Meta-Stereotype	0	0	0	0	1

Appendix E: Contrast Coding Schemes

Table 21 presents the orthogonal contrast coding scheme used to test for support of the Perceptual/ cognitive overgeneralization and Motivated threat theoretical models. In this coding scheme, only predictors C1a and C1b were of interest. The other coded predictors did not test specific hypotheses and were included to ensure that the coding scheme was orthogonal (see Cohen, Cohen, West, & Aiken, 2003, p.315). Predictor C1a compared the Personal Self-Stereotype condition and Personal Meta-Stereotype condition to the other four conditions, and predictor C1b compared the Personal Self-Stereotype condition to the Personal Meta-Stereotype condition. .

Table 21.

Contrast Coding Scheme 1

Condition	C1a	C1b	C1c	C1d	C1e
Personal Self-Stereotype	-2	1	0	0	0
Group Self-Stereotype	1	0	-1	0	1
Personal Other-Stereotype	1	0	1	1	0
Group Other-Stereotype	1	0	1	-1	0
Personal Meta-Stereotype	-2	-1	0	0	0
Group Meta-Stereotype	1	0	-1	0	-1

Table 22 displays the orthogonal contrast coding scheme used to investigate the Introjection theoretical model. As with contrast coding scheme 1, not all predictors were key for the analyses. Here, only predictor C2a was of interest, which compared conditions the Group Self-Stereotype and Group Meta-Stereotype conditions to the other conditions.

Table 22.

Contrast Coding Scheme 2

Condition	C2a	C2b	C2c	C2d	C2e
Personal Self-Stereotype	1	0	-1	0	-1
Group Self-Stereotype	-2	-1	0	0	0
Personal Other-Stereotype	1	0	1	1	0
Group Other-Stereotype	1	0	1	-1	0
Personal Meta-Stereotype	1	0	-1	0	1
Group Meta-Stereotype	-2	1	0	0	0

Table 23 displays orthogonal contrast coding scheme 3, which was used to test the Normative influence theoretical model. Again, only predictor C3a was of interest. This predictor compared the Personal Self-Stereotype, Group Self-Stereotype, Personal Meta-Stereotype, and Personal Other-Stereotype conditions to the Personal and Group Other-Stereotype conditions.

Table 23.

Contrast Coding Scheme 3

Condition	C3a	C3b	C3c	C3d	C3e
Personal Self-Stereotype	1	0	1	1	0
Group Self-Stereotype	1	0	1	-1	0
Personal Other-Stereotype	-2	1	0	0	0
Group Other-Stereotype	-2	-1	0	0	0
Personal Meta-Stereotype	1	0	-1	0	1
Group Meta-Stereotype	1	0	-1	0	-1

Table 24 displays orthogonal contrast coding scheme 4 which was used in several analyses to examine differences within conditions regarding anticipated intergroup contact reactions. All predictors were meaningful here, but the key predictors were C4a and C4c. Predictor C4a was used to compare the Personal Other-Stereotype, Group Other-Stereotype, Personal Meta-Stereotype and Group Meta-Stereotype conditions to the Personal and Group Self-Stereotype conditions, testing the Meta- and Other-stereotypes equally dominant model. Predictor C4c compared the Personal and Group Other-Stereotype conditions to the Personal and Group Meta-Stereotype conditions, testing both the Meta-stereotypes dominant (Model X) and Other-stereotypes dominant models (Model Z) (if this predictor were significant examination of means would reveal which model was supported). In addition, this coding scheme allowed for the exploratory investigation of potential differences between each type of personal and group stereotype on anticipated contact expectations. Predictor C4b compared the Personal and Group Self-Stereotype conditions, predictor C4d compared the Personal and Group Other-Stereotype conditions, and predictor C4e compared the Personal and Group Meta-stereotype conditions.

*Table 24.**Contrast Coding Scheme 4*

Condition	C4a	C4b	C4c	C4d	C4e
Personal Self-Stereotype	-2	1	0	0	0
Group Self-Stereotype	-2	-1	0	0	0
Personal Other-Stereotype	1	0	1	1	0
Group Other-Stereotype	1	0	1	-1	0
Personal Meta-Stereotype	1	0	-1	0	1
Group Meta-Stereotype	1	0	-1	0	-1